AALBORG UNIVERSITET

Fakultetskontoret for
ENGINEERING, SUND og TECH

Dokument dato: 27. november 2017

Dokumentansvarlig: Mark Gammeljord

Akademisk Råd indkaldes hermed til møde nr. 20176 onsdag den 6. december 2017 kl. 12.30-16.00 NOVI, Niels Jernes Vej 10, mødelokale 5

Indkaldte:
Mads Græsbøll Christensen, Henrik Pedersen, Petar Popovski, Knud Erik Skouby, Thomas Bak, Arne Remmen, Henrik Lund, Claus Lassen, Bent Thomsen, Ivan Aaen, Stefania Serafin, Morten Meyer Rasmussen, Lukas Bjørn Leer Bysted, Kristoffer Holger Weithøft Lindstrøm, Torben Larsen, Kirsten Nielsen, Lise Kirt Nordensholt

Afbud: Henrik Pedersen

Referent: Mark Gammeljord

	Dagsordenpunkter
1.	**Godkendelse** A. Godkendelse af dagsorden for AR møde 20176 B. Godkendelse af referat af AR møde 20175 **Orientering** **Bilag 20176-1**
2.	**Tildeling af ph.d.-grad til positivt bedømte ph.d.-afhandlinger fra:** A. Asger Heidemann Andersen, Institut for Elektroniske Systemer. Afhandlingens titel: ”Speech Intelligibility Prediction for Hearing Aid Systems”. B. Bijay Neupane, Institut for Datalogi. Afhandlingens titel: ”Predictive Data Analytics for Energy Demand Flexibility”. C. Chres Wiant Sørensen, Institut for Elektroniske Systemer. Afhandlingens titel: ”On Tunable Sparse Network Coding in Commercial Devices for Networks and Filesystems”. D. Christina Dahl Madsen, Institut for Planlægning. Afhandlingens titel: ”The logic of the project – a paradox in public administration”. E. Dilshod Ibragimov, Institut for Datalogi. Afhandlingens titel: ”Optimizing Analytical Queries over Semantic Web Sources”. **Bilag 20176-2**
3.	**Indstillinger vedr. sammensætning af sagkyndigt udvalg vedr. professorstillingen i:**

	A. ”Human Geography” ved Institut for Planlægning (stilling 60230) **Bilag 20176-3**
4.	**Indstilling vedr. sammensætning af sagkyndige udvalg vedr. adjunktstillingerne i:** A. ”Geoinformatics” ved Institut for Planlægning (stilling 201737) B. ”Energy Planning and Energy Systems Modelling” ved Institut for Planlægning (stilling 201738) C. ”Energy Planning and Geographical Information Systems” ved Institut for Planlægning (stilling 201739) **Bilag 20175-4**
5.	**Indstillinger vedr. sammensætning af sagkyndigt udvalg vedr. postdocstillingen i:** A. ”Aerial connectivity over cellular networks” ved Institut for Elektroniske Systemer (stilling P21748) B. ”Control Theory” ved Institut for Elektroniske Systemer (stilling P21752) **Bilag 20176-5**
6.	**Høring af rektors forslag til budgetprincipper for budget 2019** Kristian Vagn Nielsen fra fakultetskontorets Økonomi Service præsenterer på mødet forslaget om ændring af universitetets budgetprincipper fra og med budget 2019. Akademisk bedes drøfte rektors forslag til ændring af budgetprincipper fra og med budget 2019, samt udarbejde et høringssvar hertil. **Bilag 20176-6a** **Bilag 20176-6b** **Bilag 20176-6c** **Bilag 20176-6d**
7.	**Fremme af god videnskabelig praksis** Som følge af den nye organisering af Aalborg Universitets Praksisudvalg (AAU Praksisudvalg eller PU AAU) pr. 1. juli 2017, blev ansvaret for fremme af god videnskabelig praksis placeret hos de Akademisk Råd (AR). Akademisk råd bedes derfor drøfte og beslutte en proces for, hvordan rådet får udarbejdet nye retningslinjer for fremme god videnskabelig praksis. Kristian Østergaard Sørensen og Helen Kjerstein Kristensen fra Ph.d.-kontoret deltager under punktet. **Bilag 20176-7a** **Bilag 20176-7b** **Bilag 20176-7c** **Bilag 20176-7d**
8.	**Æresdoktor 2018 for TECH** Akademisk Råd bedes drøfte og godkende indstillingen fra bedømmelsesudvalget **Bilag 20176-8a** **Bilag 20176-8b**
9.	**Godkendelse af mødekalender 2018** AR bedes godkende mødekalenderen for 2018 **Bilag 20176-9a** **Bilag 20176-9b**
10.	**Meddelelser fra dekanen og/eller formanden**

11.	**Eventuelt**

Til orientering

- Fortegnelse over sager godkendt af dekanen siden sidst

OBS! Vedr. bedømmelsesudvalg: I de tilfælde hvor ansøgningsfristen ligger efter Akademisk Råds møde kontrolleres der efterfølgende for inhabilitet og sammensætning af udvalget (kvindelig bedømmer). Hvis der konstateres uregelmæssigheder, vil dekanen/formanden godkende nyt/nye medlemmer.

AALBORG UNIVERSITET

Fakultetskontoret for
ENGINEERING, SUND og TECH

Dokument dato: 3. oktober 2017

Dokumentansvarlig: Mark Gammeljord

Akademisk Råd indkaldes hermed til møde nr. 20175 onsdag den 25. oktober 2017 kl. 12.30-16.00 NOVI, Niels Jernes Vej 10, mødelokale 5

Tilstedeværende:
Mads Græsbøll Christensen, Henrik Pedersen, Petar Popovski (via Skype), Thomas Bak, Arne Remmen, Henrik Lund, Bent Thomsen, Ivan Aaen, Claus Lassen, Stefania Serafin, Lukas Bjørn Leer Bysted, Torben Larsen, Kirsten Nielsen, Lise Kirk Nordensholt, Mark Gammeljord, Rikke Poulsen

Gæster: Troels Hedegaard Dissing (pkt. 10)

Afbud: Kristoffer Holger Weithøft Lindstrøm

Referent: Mark Gammeljord

	Dagsordenpunkter
1.	**Godkendelse** A. Godkendelse af dagsorden for AR møde 20175 B. Godkendelse af referat af AR møde 20174 **Orientering** **Til efterretning** C. Referat fra ph.d.-udvalgsmøde 4-2017 den 21. august 2017 **Bilag 20175-1**
	1A: dagsorden godkendt 1B: referat fra AR møde 20174 godkendt 1C. Referat far ph.d.-udvalgsmøde 4-2017 taget til efterretning
2.	**Tildeling af ph.d.-grad til positivt bedømte ph.d.-afhandlinger fra:** A. Albert Gyamfi, Institut for Elektroniske Systemer. Afhandlingens titel: ”Research on web 2.0 usage for knowledge management processes: The case of Ghana Cocoa Board (COCOBOD)”. B. Guillermo Andrés Pocovi Gerardino, Institut for Elektroniske Systemer. Afhandlingens titel: ”Radio Ressource Management for Ultra-Reliable Low-Latency Communications in 5G”. C. Kasper Fløe Trillingsgaard, Institut for Elektroniske Systemer. Afhandlingens titel: ”Information-theoretic aspects of low-latency communications”. D. Sara Bjørn Aaen, Institut for Planlægning. Afhandlingens titel: ”Understanding citizen action in infrastructure development processes”.

	Bilag 20175-2
	Alle godkendt
3.	**Indstillinger vedr. sammensætning af sagkyndige udvalg vedr. lektorstillingerne i:** A. ”Application of Materials in Product Design” ved Institut for Planlægning (stilling 201728/42238) B. “Conceptualisation and Prototyping in Product Design” ved Institut for Planlægning (stilling 201729/42239) **Bilag 20175-3**
	Begge godkendt
4.	**Indstilling vedr. sammensætning af sagkyndigt udvalg vedr. adjunktstillingen i:** A. ”Navigating Design Engineering Processes” ved Institut for Planlægning (stilling 201735) **Bilag 20175-4**
	Godkendt
5.	**Indstillinger vedr. sammensætning af sagkyndige udvalg vedr. postdocstillingerne i:** A. ”Data Analysis and Data Mining in Problem-Based Learning” ved Institut for Arkitektur og Medieteknologi (stilling P21743) B. ”Airport City Futures” ved Institut for Arkitektur og Medieteknologi (stilling P21744) **Bilag 20175-5**
	Begge godkendt
6.	**Digitalisering af godkendelse af Ph.d.-afhandlinger og godkendelse af bedømmelsesudvalg** AR bedes drøfte det vedlagte proces for digitalisering/skriftlig godkendelse af ph.d.-afhandlinger og bedømmelsesudvalg AR bedes formelt godkende digitalisering/skriftlig godkendelse af ph.d.-afhandlinger og bedømmelsesudvalg. **Bilag 20175-6**
	Indstilling godkendt, ved mindst en deltager som markerer ”ikke godkendt” eller ”til diskussion” behandles godkendelsen af Ph.d.-afhandlinger og/eller godkendelse af bedømmelsesudvalget på førstkommende Akademisk Råd.
7.	**Kommunikation fra Akademisk Råd** AR bedes drøfte og træffe beslutning om, hvordan kommunikationen fra AR til omverden skal være fremadrettet **Bilag 20175-7**
	Enighed om, at det er afgørende med en åben debat i Akademisk Råd. Referater bør specificere, hvis mindretal af Akademisk Råd har en anden holdning end rådet. Fælles udtalelser sker via formanden eller et medlem med delegation hertil. Hvis enkelte medlemmer ønsker at udtale sig, skal det ske med navns nævnelse. Den konkrete udtalelse i forskerforum er fra specifikt medlems interne notater, der således er delt med journalisten uden medlemmets godkendelse.
8.	**Ny sammensætning af bedømmelsesudvalg for adjunktstillinger** Der indstilles at AR godkender ny sammensætning af bedømmelsesudvalg for adjunktstillinger **Bilag 20175-8**
	Besluttet at bedømmelsesudvalg for adjunktstillinger skal indeholde minimum 3 medlemmer med flertal af eksterne bedømmere. De to eksterne bedømmere skal være uvildige og grundige. AR ønsker en større støtte fra HR til at screene potentielle kandidater. Ligeledes er der ønske om bedre IT-understøttelse til bedømmelsesudvalg og ansættelsesudvalg. AR har ønske om at få en mere ensartet proces for arbejdet i bedømmelsesudvalget.

	TECH sekretariatet udarbejder et oplæg til en smidigere proces for bedømmelse og ansættelse. Hvorefter emnet kan tages op som et tema til diskussion i AR
9.	**Akademisk Råds rolle som aktiv sparringspartner** AR bedes drøfte, hvordan AR ønsker at være en aktiv sparringspartner for dekanen **Bilag 20175-9**
	Nedenstående opgaver for Akademisk Råd kan medvirke til at AR bliver en aktiv sparringspartner. ARs opgaver kan være: At hjælpe til at positionere fakultet både internt og eksternt. At have en positiv attitude til ændringer og muligheder. At have fokus på generelle akademiske forhold. At være en rådgivende funktion. At øge synligheden om hørringssvar og centrale beslutninger Der var enighed om at en mulighed kunne være at afholde et rådsseminar med de andre (akademiske) råd og rektor. Dekan Henrik Pedersen tilkendegav enighed i ovenstående opgaver er vigtige for AR, og at han ønsker at bruge AR som en aktiv sparringspartner der kan komme med kvalificerede inputs til at sikre et højt akademisk niveau på TECH.
10.	**Budget 2018** Præsentation af budget 2018 ved Dekan Henrik Pedersen og EST økonomicenter Der indstilles at AR tager fakultetets forventede resultatetmål til efterretning og godkender resultatbudgettet for 2018. **Bilag 20175-10**
	Budgettet blev præsenteret. AR indstiller budgettet. AR udtrykker utilfredshed med den korte tidsfrist og den deraf begrænset mulighed for at behandle budgettet. AR ønsker fremadrettet mere tid til at behandle budgettet.
11.	**Fokuspunkter 2018** Præsentation af fokuspunkter 2018 samt forklaring af ny proces for udarbejdelsen af fremtidige fokuspunkter AR bedes komme med bemærkninger til fokuspunkter præsenteret på mødet samt tage den vedlagte procesplan til efterretning. **Bilag 20175-11**
	Fokuspunkter for 2018 blev præsenteret. Vigtigt at hvert institut og hvert studie finder sin egen måde at lave PBL. Vi bør benchmarke vores uddannelsers frafald med tilsvarende internationale uddannelser og ikke kun nationalt. Positiv tilkendegivelse om muligheden for 4+4 modellen samt muligheden for et pilotprojekt med 1. år i forskningsmiljøet. Behov for mere snævert fokus. Tilfredshed med forskningsopbygning som et fokuspunkt. Ønske om administration som fokuspunkt – et ønske om, at empower den decentrale administration.
12.	**Meddelelser fra dekanen og/eller formanden**

13.	**Eventuelt**

Til orientering

- Fortegnelse over sager godkendt af dekanen siden sidst

OBS! Vedr. bedømmelsesudvalg: I de tilfælde hvor ansøgningsfristen ligger efter Akademisk Råds møde kontrolleres der efterfølgende for inhabilitet og sammensætning af udvalget (kvindelig bedømmer). Hvis der konstateres uregelmæssigheder, vil dekanen/formanden godkende nyt/nye medlemmer.

AALBORG UNIVERSITET
Institut for Elektroniske Systemer
Fredrik Bajers Vej 7B
9220 Aalborg Ø
www.es.aau.dk

Dato: 24. november 2017

Til Forskerskolen
Att.: Lisbeth Diinhoff
N.J. 10

Vedrørende tildeling af ph.d.-grad til Asger Heidemann Andersen

Institut for Elektroniske Systemer indstiller at bedømmelsesudvalgets indstilling følges således at Asger Heidemann Andersen tildeles ph.d.-graden for sin ph.d.-afhandling "Speech Intelligibility Prediction for Hearing Aid Systems". Forsvaret fandt sted d. 22.11.2017.

Professor Zheng-Hua Tan været hovedvejleder for Asger Heidemann Andersen.

Med venlig hilsen

Børge Lindberg

Institutleder

Institutleder Børge Lindberg, tlf. +45 9940 8638, E-mail bli@es aau.dk
Institutsekretær Kirsten Jensen, tlf. +45 9940 8650, E-mail kri@es.aau dk

AALBORG UNIVERSITY
DENMARK

Assessment of the PhD thesis entitled:

Speech Intelligibility Prediction for Hearing Aid Systems

Submitted by Asger Heidemann Andersen, M.Sc. in Wireless Communication

The assessment committee consists of the following members as decided by the Dean of the Technical Faculty of IT and Design on 3 August, 2017:

- Member 1: Dr. rer, nat.Thomas Brand, Department of Medical Physics and Acoustics, Oldenburg University, Germany. E-mail: Thomas.brand@uni-oldenburg.de
- Member 2: Reader Mike Brookes, Electrical and Electronic Engineering, Imperial College London, United Kingdom. E-mail: mike.brookes@imperial.ac.uk.
- Member 3 (chairman): Associate Professor Flemming Christensen, Department of Electronic Systems, Aalborg University. E-mail: fc@es.aau.dk.

Supervisor for the thesis has been Professor, Zheng-Hua Tan, Aalborg University.

Co-supervisors for the thesis have been Professor, Jesper Jensen, Aalborg University & Oticon A/S and Tekn. Dr. Jan Mark de Haan, Oticon A/S.

Description of the thesis

The thesis is based on a collection of 3 journal and 5 conference papers and contains an introduction to the topic including summary of the findings. The introduction contains 5 chapters (1 The Challenges of Speech Communication, 2 Speech Intelligibility Prediction, 3 Applications to Hearing Aid Systems, 4 Summary of Contributions, 5 Directions of Future Research) and it is accompanied by a list of references (155). The thesis has a length of 258 pages of which the introduction takes 46 pages and the papers 183.

The papers are:

- Paper A: A Binaural Short Time Objective Intelligibility Measure for Noisy and Enhanced Speech, Asger Heidemann Andersen, Jan Mark de Haan, Zheng-Hua Tan, Jesper Jensen, INTERSPEECH, pp. 2563–2567, Dresden, Germany, 2015, (Status: Printed).
- Paper B: A Method for Predicting the Intelligibility of Noisy and Non-Linearly Enhanced Binaural Speech, Asger Heidemann Andersen, Jan Mark de Haan, Zheng-Hua Tan, Jesper Jensen, 41st IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), Shanghai, China, pp. 4995-4999, 2016, (Status: Printed).
- Paper C: Speech Intelligibility Prediction as a Classification Problem, Asger Heidemann Andersen, Esther Schoenmaker, Steven van de Par, 26th IEEE International Workshop on Machine Learning for Signal Processing (MLSP), pp. 1-6, Salerno, Italy, 2016, (Status: Printed).
- Paper D: Predicting the Intelligibility of Noisy and Non-Linearly Processed Binaural Speech, Asger Heidemann Andersen, Jan Mark de Haan, Zheng-Hua Tan, Jesper Jensen, IEEE/ACM Transactions on Audio, Speech, and Language Processing, Vol. 24, No. 11, pp. 1908–1920, 2016, (Status: Printed).
- Paper E: A Non-Intrusive Short-Time Objective Intelligibility Measure, Asger Heidemann Andersen, Jan Mark de Haan, Zheng-Hua Tan, Jesper Jensen, 42st IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), New Orleans, United States, pp. 5085-5089, 2017, (Status: Printed).
- Paper F: On the use of Band Importance Weighting in the Short-Time Objective Intelligibility Measure, Asger Heidemann Andersen, Jan Mark de Haan, Zheng-Hua Tan, Jesper Jensen, INTERSPEECH, pp. 2963–2967, Stockholm, Sweden, 2017, (Status: Printed).

- Paper G: Refinement and Validation of the Binaural Short Time Objective Intelligibility Measure for Spatially Diverse Conditions, Asger Heidemann Andersen, Jan Mark de Haan, Zheng-Hua Tan, Jesper Jensen, Speech Communication, (Status: Submitted).
- Paper H: Non-Intrusive Speech Intelligibility Prediction using Convolutional Neural Networks, Asger Heidemann Andersen, Jan Mark de Haan, Zheng-Hua Tan, Jesper Jensen, IEEE/ACM Transactions on Audio, Speech, and Language Processing, (Status: Submitted).

Assessment of the thesis

Part 1: Extended summary

The extended summary is very well written and easy to read. It gives a clear formulation of the goals of the research and motivates their importance.

Section 1 gives a general high-level description of the process of speech communication including hearing, speech production, speech processing, binaural processing, assessment of intelligibility, and different factors influencing speech intelligibility. It explains the reasons why the thesis concentrates on using intelligibility as a performance measure and goes on to discuss the properties of the communications chain that affect the intelligibility of speech.

Section 2 gives an introduction to speech intelligibility prediction (SIP). It presents a taxonomy of intelligibility prediction algorithms in which they are classified according to their required input signals and to whether they attempt to predict monaural or binaural intelligibility. It appears that not all existing algorithms fit perfectly into the taxonomy, but it is very helpful for the organisation of this thesis, as all papers are clearly dedicated to this taxonomy as explained in section 4. Section 2 goes on to review the important intelligibility prediction algorithms that have been previously described in the literature. The review is well presented; it clearly identifies the differences between algorithms and explains the principles that underlie each one. The review could have been strengthened by the inclusion of quantitative comparisons of algorithm performance in addition to the qualitative comparisons that it currently presents.

Section 3 describes how intelligibility prediction algorithms can help in the development and, potentially, the operation of hearing aids. It presents a classification of SIP in the development of hearing aids as well as in future hearing aid processing. This is essential for defining the rationale of this thesis and for motivating the two main focusses: binaural SIP and non-intrusive SIP.

Section 4 presents an overview and short summary of the papers. It summarizes the contributions of the thesis, explains how each of the presented papers fits into the taxonomy presented in Sec. 2 and provides a brief overview of the contribution from each paper.

Section 5 briefly suggests some directions for future work including deep learning neural networks that will certainly offer new possibilities that go beyond the scope of the thesis.

The use of references is extensive. A bibliography of 155 references is included.

The contributions of the work presented in this thesis lie in two main areas.

1. It introduces a novel algorithm for binaural SIP. Although other researchers have previously proposed algorithms for this task, this is the first algorithm that is able to give reliable results even when the speech has been processed by an enhancement algorithm as is typical in a hearing aid. In the course of

several papers [A, B, D, G], the proposed algorithm has been refined and improved in order to enlarge the range of circumstances under which it performs reliably.

2. The second main area of contributions is in the development of a SIP algorithm that is non-intrusive, i.e. one that does not require knowledge of the undistorted speech signal. The thesis present two alternative approaches to this problem. Although both extract similar features from the degraded speech signal, one uses signal processing techniques to estimate the unknown clean speech signal while the other uses a neural network to estimate the intelligibility of the degraded speech directly.

Part 2: Papers

In general, all papers appear very well written with a common clear and systematic approach to research communication.

Paper A:

This paper presents the BSTOI metric, which combines the equalization-cancellation (EC) model with the short time objective intelligibility measure (STOI). Similar combinations of the EC model exist with other measures, for instance with the speech intelligibility index (SII). However, as this model requires the clean speech signal and the degraded binaural signal as inputs, it has the advantage – over previous binaural intelligibility metrics – that it can be applied not only to linearly processed speech (as other models), but also to non-linearly processed signals. Experimental results show that it is able to predict the binaural advantage as a function of interferer azimuth in experiments that use a speech target and speech-shaped noise interferer. The derivation of the model is very systematic and the evaluation convincing.

Paper B:

This paper is a predecessor of paper D. Details are discussed there.

Paper C:

This paper investigates how individual stimuli - nonsense syllables (logatomes) - can be predicted in a binaural setting by means of STOI-like features extracted from noisy speech. Different methods of feature extraction are compared and analysed with Fisher linear discriminant analysis. It shows that, with this rather straightforward classifier, the performance of the classifier is substantially better than chance but that it normally over-predicts the intelligibility. Interestingly all three types of feature extraction lead to similar results and feature dimensionality seems to play a major role. This paper contains many interesting new ideas which should be further investigated in future studies.

Paper D:

This paper presents the deterministic binaural STOI (DBSTOI) metric, which replaces Monte Carlo elements of the BSTOI presented in paper A by the deterministic calculation of an expected value. This removes the stochastic uncertainty in the measure and reduces its computational complexity by almost a factor of 20. The paper includes similar evaluation results as in paper A, which show that the performance is very similar to that of BSTOI. For computational tractability reasons, a number of simplifications were made to the STOI measure, but although the paper states that these have no apparent effect on performance, no systematic evaluations are performed to validate this explicitly.

An important feature of the DBSTOI measure is the simple frame-based voice activity detector (VAD) which is essential also in the following papers. The analytical derivations are elegant and include the state-of-the art knowledge on this field. The evaluation of the model is convincing. It is shown that the DBSTOI is applicable to different situations including non-linear processed signals.

Paper E:

Most speech intelligibility metrics require knowledge of the clean speech signal. This paper presents a non-intrusive metric (NI-STOI) that uses only the mixed noisy speech. The metric uses principal component analysis to estimate the modulation domain characteristics of the clean speech and then uses a STOI-like measure to estimate the intelligibility. This has several advantages for many applications. The calculation of the NI-STOI still uses the correlation in the modulation domain of a clean speech estimate with the mixed signal. Interestingly, the estimate of the clean signal is based on the mixture itself. This is achieved using a sparse-principal-component-analysis of the speech estimate, which does only represent those signal components that have been trained as speech-like. This training appears to be superior to the heuristic assumptions used in the non-intrusive SRMR model, which has many conceptual similarities. Interestingly, only the lowest modulation frequency channel is required for NI-STOI analysis. This even increases the similarity to the SRMS model. It is not easy to see why the training of the NI-STOI is introducing such a large advantage.

It would have been nice to compare the performance with other published non-intrusive metrics that are designed for intelligibility estimations, but the evaluation of the model with human data is convincing and it is not surprising that the model fails when the competing signal contains a single speech source, because so far the model applies no stream segregation.

Paper F:

The original STOI measure was constructed with strong focus on simplicity and included no band importance weighting (BIF). This paper investigates whether the performance of STOI could be improved by applying non-uniform weights as is done in most other speech intelligibility prediction algorithms. Although it does not quite have the best overall performance, the paper concludes that, surprisingly, the uniform weights of the existing algorithm are the best choice. The statistical analyses using Kendall's tau is very elegant here, because it excludes the effect of the reference intelligibility function that interacts with the BIF. Even though this study produced a negative result, it is important that this work was done as we now know that BIFs do not significantly improve STOI. However, it would have improved the paper if the values used in the evaluated non-uniform weight functions were shown.

Paper G:

This paper investigates a bias observed in DBSTOI (paper D) that arises in poor SNR conditions when diffuse noise is present. The origin of the bias is identified and a modified metric, MBSTOI, is proposed in which it is largely eliminated. Experimental results confirm that the modified metric performs almost as well as DBSTOI in other circumstances. The MBSTOI is evaluated using critical data for additive noise, but not for distorted signals. However, arguments are presented why the derivation of MBSTOI is expected to hold also for non-linearly processed signals. This is convincing but clearly further work is required regarding this question.

Paper H:

Like paper E, this paper presents a non-intrusive speech intelligibility metric that uses STOI-like features. The method applies a convolutional neural network and a relatively small data basis which the author justifies with the fact that SIP is a simple problem compared to automatic speech recognition (ASR) and that therefore smaller neural networks and smaller data bases (compared to ASR) can be used. The algorithm is tested on a range of datasets and found to give intelligibility predictions that are as good as or better than those of STOI and ESTOI despite having no access to the clean speech signal. The results of this approach are very promising even though further situations have to be evaluated in future work. A very useful result of this approach is that the convolution kernels that are generated during training can be visualized. This offers different directions of further research which are promising.

Oral presentation and discussion
Date and place of the oral defence: 22 November 2017, Aalborg, Denmark.

Asger gave a 45 minutes presentation of his work keeping within the allowed time. The presentation was well structured and supported by good illustrations explaining both technical matters as well as the overall structure of the PhD study. After the presentation the committee raised a number of general and specific questions, which were discussed during a period of 1 hour and 40 minutes. Asger engaged in the scientific discussion with very elaborate and well structured answers on the topics brought to question. He demonstrated a wide knowledge within the area, both on the general overview and on very specific questions.

Conclusions

Overall, the work presented in this thesis has made a substantial and very significant contribution to the field of speech intelligibility prediction (SIP) with the two main focusses: Binaural SIP and non-intrusive SIP. As the resulting SIP tools can be applied to non-linearly processed signals, this work enables the use of SIP in the development of hearing aid speech enhancement algorithms in a way that was not previously practicable. The amount of work presented is clearly very large compared to the average PhD thesis.

The thesis is very well written and easy to read. It has two main parts, the introduction and the papers. Both parts demonstrate the clear conception and elaborated realisation of this thesis. The author demonstrates a deep knowledge of the state-of-the-art of current research and successfully contributes to the field by consequent work and many new ideas. This progress was achieved by precise analysis and further development of existing methods like the STOI measure and the EC model as well as evaluating ideas regarding the use of for instance neural networks.

At the defence, the candidate gave a very well structured presentation and engaged with confidence, scientific maturity and a general high level in the scientific discussion.

The committee unanimously recommends that Asger Heidemann Andersen is awarded the PhD degree.

22 November 2017

Thomas Brand

Mike Brookes

Flemming Christensen

AALBORG UNIVERSITET

Cassiopeia

Det Teknisk Naturvidenskabelige Fakultet
Forskerskolen
Njv 10

Att.: Bettina Wedde

8 november 2017

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Ph.d.- forsvar Bijay Neupane

Vedlagt fremsendes underskrevet indstilling for Bijay Neupane, som forsvarede sin ph.d. afhandling den 3. november 2017 på SL 300.

Best regards,

Helle Schroll

AALBORG UNIVERSITY
DENMARK

Assessment of the PhD thesis entitled:

Predictive Data Analytics for Energy Demand Flexibility

Submitted by Bijay Neupane, M.Sc. in August 2017.

The assessment committee consists of the following members as decided by the Dean of the Technical Faculty of IT and Design on 10 August 2017:

- Member 1: Professor Toon Calders, University of Antwerp/ULB Bruxelles, Belgium. E-mail: toon.calders@ulb.ac.be
- Member 2: Dr. Mathieu Sinn, IBM Research Ireland, Ireland. E-mail: MATHSINN@ie.ibm.com
- Member 3 (chairman): Associate Professor Bin Yang, Aalborg University, Denmark. E-mail: byang@cs.aau.dk

Supervisor for the thesis has been Professor Torben Bach Pedersen Aalborg University, Denmark.

Co-supervisor for the thesis has been Prof. DR.-ING. Wolfgang Lehner, TU Dresden, Germany.

Description of the thesis

The thesis is based on a collection of 6 papers, which consists of 143 pages in total. The detailed information of the 6 papers is listed as follows.

- Paper [1]: Bijay Neupane, Torben Bach Pedersen, and Bo Thiesson, "Evaluating the Value of Flexibility in Energy Regulation Markets". In Proceedings of the 2015 ACM Sixth International Conference on Future Energy Systems (e-Energy '15), Bangalore, India, pages 131-140, 2015. Published.
- Paper [2]: Bijay Neupane, Torben Bach Pedersen, and Bo Thiesson, "Towards flexibility detection in device-level energy consumption" In Proceedings of the Second ECML/PKDD Workshop, DARE'14, pages 1-16, 2014. Published.
- Paper [3]: Bijay Neupane, Laurynas Šikšnys, and Torben Bach Pedersen, "Device level Demand Forecasting for Flexibility Markets," Submitted for journal publication, Submitted in August 2017.
- Paper [4]: Bijay Neupane, Laurynas Šikšnys, and Torben Bach Pedersen, "Generation and Evaluation of Flex-Offers from Flexible Devices," In Proceedings of the ACM Eighth International Conference on Future Energy Systems (e-Energy '17), Hong Kong, pages 131-140, 2017. Published.
- Paper [5]: Davide Frazzetto, Bijay Neupane, Thomas Dyhre Nielsen, and Torben Bach Pedersen, "User-comfort Oriented Prediction and Scheduling of Flex-Offers from Flexible Units," In preparation.
- Paper [6]: Bijay Neupane, Laurynas Šikšnys, and Torben Bach Pedersen, "DeMand: A Tool for Evaluating and Comparing Device-Level Demand and Supply Forecast Models". In proceeding of the Workshops of the EDBT/ICDT 2016 Joint Conference, EnDM 2016, Bordeaux, France, pages 1-6, 2016. Published.

Assessment of the thesis

Mini review for Paper [1]: Evaluating the Value of Flexibility in Energy Regulation Markets

This paper tackles a challenging research question: what is the utility of energy flexibility offers in the Nordic spot and regulation markets? Higher flexibility leads to a better balance between demand and supply and as such helps to avoid up/down regulation. One of the key steps in answering that question is designing a model for up/down regulation prices as a function of the spot market price and the up/down

regulation volume. The authors consider three different models which are validated and compared against each other. Controlled experiments using real-world data combined with the simulated effect of moving an assumed flexible offer show that significant gains could be achieved when part of the offer is made flexible.

The description and formulation of market objectives of utilizing flexibility is very clear. The experimental analysis in Section 6 is conducted systematically and discussed carefully. The main takeaway messages from this chapter are solidly grounded. A few concerns / unclear points:

- It would have been good to include the actual performance of the final model (in terms of MSE or other metrics). Otherwise, this leaves the question how reliable the estimated price is. As this price is a key element in the measurement of the benefits of the method, the conclusions are not fully supported by the experiments. Perhaps include a graphical comparison of model output / market actuals for the testing period (Jan-Feb 2014).
- What exactly is 'n' (in the notation of Section 5), i.e., into how many individual flex-offers is the total capacity of 1, 10, ..., 250MWh divided?
- It would have made sense to introduce randomness to the greedy algorithm (solving equation (7)), run it repeatedly, and report the maximum benefit over all runs. This would have helped to avoid some of the artefacts in Figure 5 (a) (e.g., non-monotonic relations between capacity and savings), which seem to be due to the exact order in which the greedy algorithm evaluates flex-offers.
- It would have been good to run the experiments over different testing periods, as the provided test period (Jan-Feb 2014) is rather short and might exhibit a seasonal bias.
- The paper doesn't discuss the potential side effect that the costs of up/down regulation services might actually increase as a consequence of demand response, as up/down regulation becomes less lucrative and fewer market players might be offering those services.
- The references in this paper are mostly related to technical aspects of demand side management; it would have been interesting to compare the findings with results from the econometric literature, i.e. are the 49% reduction in regulation costs and 29.4% reduction in regulation volume coherent with findings by other authors.
- The estimation method seems to assume that demand and supply of energy is perfectly known at the time the flex-offers are planned. Given the nature of some of the energy sources such as wind energy this is a highly unrealistic assumption. Isn't it the case that the Balance Responsible Party actively tried to avoid any up- or down-regulation by setting the spot-price to the level that results in balance? I.e., where demand and supply curves meet? In this respect the up- or down-regulation are at least partially due to unpredictable fluctuations in supply. At least some discussion on this aspect would have been expected. A more realistic setting would hence be how to decide best, on the spot, if a flexible demand is moved to the current time, or away from it to optimize the balance in the view of an only partially known future.

Overall, the paper shows that in a very controlled setting, a flexible demand can lead to huge gains. In addition, the paper also makes a scientific contribution, and the link to the overall outline of the thesis is clear.

Mini review for Paper [2]: Towards flexibility detection in device-level energy consumption

The paper investigates properties of device-level energy, with the goal showing that there are regularities in device usage patterns. The importance of detecting such regularities is that they can be used as a first step towards automatic recognition of device flexibility and hence automating making flex-offers.

The starting point is a systematic list of patterns/correlations that might be present in or among particular devices. The authors carefully explain the dataset that is being used in the analysis. In particular, the dataset consists of energy consumption profiles for six different houses, each containing profiles for 16 to 24 individual devices. The workflow of pre-processing the data is arguably one of the biggest challenges working with such high-dimensional and low-level information. The proposed pre-processing approaches for anomaly removals, state segmentation, and filling gaps are explained in sufficient detail.

Finally, the paper uses descriptive and graphical statistics to extract patterns and correlations in device usage. The analysis is carried out systematically and discussed carefully. The analysis shows clear week versus weekend trends, and strong regularities in the times certain devices such as for instance dishwashers are operated. Moreover, there are strong correlations between different devices which is clearly very important when making flexible offers; for instance, strongly correlated devices could be packaged in one offer.

The methodology appears to be solid, although one has to keep in mind that they are evaluated on a relatively small dataset (devices from only six households), hence it is difficult to say how well they would generalize. The small size of the dataset and its quality issues make it difficult to come to conclusive answers for some of the hypotheses, which the author acknowledges. In contrast to the first sentence in Chapter 5.4 of the PhD thesis (which builds on this paper), it is hard to see that this work answered (or attempted to answer) the question whether the flexibilities that users have in their daily routines "are [...] enough".

To conclude, there is sufficient scientific value in this work and it is well-aligned with the goal of the thesis.

Mini review for Paper [3]: Device level Demand Forecasting for Flexibility Markets

This paper is yet unpublished and as such the review is based on Chapter 6 of the thesis. This paper studies forecasting models for energy demand at the device level, and analyses the utility of such forecasts for trading flexibility in energy markets. Strictly speaking, such forecasting models are developed only for washer/dryer devices, which perhaps should be made clear earlier on.

The modelling approaches are carefully explained: pattern sequence matching and logistic regression with importance weights and/or L1 regularization. However, little information is provided for the techniques used; it is especially not clear why exactly these three classifiers were chosen, and other, more state-of-the-art classifiers such as Random forests or Support Vector Machines have been omitted. Furthermore, clearly

the independent variables are correlated which is known to be a problem for logistic regression. In addition, there appear to be some inconsistencies in the formal write-up of Algorithm 1 and 2:

- Algorithm 1:
  - the implementation of p(h) in the case where M is empty (line 8/10) appears to be different from what is described in the text ("we calculate the probability over the complete dataset")
  - note that d-1 will be in M, leading to a problem in line 13 (since a_d is not available)
- Algorithm 2: M could still be empty after the while loop (line 2-5).

It is unclear how to derive the loss in equation (4). Shouldn't this be a \leq instead of =?

This paper contains very little concrete information regarding the dataset characteristics. The experimental analysis (Section VI) doesn't mention the training/validation/test data split, which is an important detail for a machine learning model evaluation. What is the exact approach to "tune the model correctly so that it self-selects the most relevant [features]" (Section VI A)? It is not fully convincing that, based on looking at two devices on a relatively small dataset, one can conclude "that the proposed device-level forecast model is generalizable"; perhaps a more careful wording would have been advisable. In Section VI B, what exactly is the test period over which the savings in energy costs could be achieved?

Many of the settings in the experiments are insufficiently explained: (1) For the group level it is not explained how the groups are formed in the experimental section. The reader has to assume it is as given in the example when groups are introduced. (2) Similarly, the procedure to select the optimal lambda ("The best regularization parameter for the classifiers is estimated via cross-validation over each λ value.") What does this mean? Was cross-validation run for each value of lambda, and the best selected, or was the selection of the best lambda itself cross-validated? (as should have been done)

There is a section on demand forecast (instead of activation forecast) but experiments are absent. A reason for the absent experiments should be provided. Furthermore, to measure the performance of demand prediction it is proposed to bin the demands and predict the bin instead as a classification problem. It is unclear why this transformation is useful. This is clearly a regression problem of which performance could be measured with RMSE for instance.

The performance of the classifiers at the hourly level is poor. Statements like "the model achieves a precision of 1, i.e., 0 unexpected demands, for some threshold values" are deceptive given that this precision is reached for a very low recall value. At the daily level performances are more acceptable but it is questionable if predictions at this granularity are useful for the prediction task.

The overall goal in the chapter is very interesting and valuable. This paper is a scientific investigation of a challenging research question; it follows a methodological approach and obtains valid results on the given data set. The overall conclusion seems to be sufficiently supported: it is possible to some extent to predict whether or not a device will be used and at what time, based on historical information of the device's usage.

Mini review for Paper [4]: Generation and Evaluation of Flex-Offers from Flexible Devices

This paper corresponds to chapter 7 in the thesis and is by far the strongest of the thesis. This paper presents an essential piece of work on predictive analytics tools for extracting energy flexibility offers from device-level information. For three types of devices: wet devices, electronic vehicles, and heat pumps, it is studied how flex-offers can be generated based on historical information about the device's usage.

Algorithm 1-3 and Figures 3, 4-6 of paper [4] are a very clear, concise summary of the general workflow and specializations for particular devices. The presented methodology involves the combination of a large number of individual techniques and results, which is done excellently. The modular structure, formal descriptions in pseudo-code and graphical illustrations help the reader to understand the complex workflow at various levels of detail. The statistical and financial evaluations are described and carried out very carefully. Figure 14 needs a few improvements (the labels on the x-/y-axis appear to be wrong; the legend covers large parts of the graphs). It is a bit of overstatement to say that the proposed approach "can extract [device-level] flexibility with up to 98% accuracy" (Abstract), as this is only the case for particular types of devices with low amount of flexibility anyway.

As in the other chapters, for the flex offers that are generated, an evaluation procedure is developed that takes into account the economic reality of today's energy market. The experiments are well-designed and their results are clearly explained. From the experiments it is clear that the goal of the chapter, namely automatically generating profitable flex offers for the three aforementioned types of devices is reached by the methods exposed in the chapter. It would have been good to be clearer about the exact testing periods, particularly as some experiments (Figure 9-10) compare flexible demand over different seasons.

Overall this paper appears to be a solid and significant piece of work. The analysis of the results and the conclusion are of high scientific quality and the chapter is very well-written.

Mini review for Paper [6]: DeMand: A Tool for Evaluating and Comparing Device-Level Demand and Supply Forecast Models

This paper describes the architecture, implementation and interfaces of the "DeMand" system, which underlies a lot of the experimentation from the previous papers. Exemplarily, the deployment and evaluation of a device-level forecasting model is demonstrated. The paper is well written and organized. The paper describes the system with a use-case walking the reader through the different steps in the tool.

In terms of research originality and significance, this paper does not introduce any new scientific contributions but is of great importance for the dissemination of the work. It reads more like a technical report or demo paper, rather than solving a specific research challenge. In particular, the paper lacks an evaluation of the effectiveness of the DeMand system for model design and evaluation (e.g. by user

testing). It remains unclear who the users of this system would be, and how effective and efficient they would find this tool for accomplishing their goals. However, by making a tool available to other researchers the impact of the research increases and makes it more easily accessible. As such the tool in itself is a worthwhile contribution.

Overall comments for the whole thesis:

Overall, the PhD thesis is very well structured. The thesis studies an interesting research problem: how can data analysis and predictive analytics techniques be used to assist and support the system of flex offers in today's dynamical energy market. It is clear, in every chapter, how the individual pieces of work contribute towards the overall investigation. The writing is good, despite a relatively large number of minor grammatical mistakes (mostly singular/plural endings, present tense form in 3rd person singular versus other forms; "there" vs "their", "where" vs "were" etc), which could be easily fixed. The quality of the illustrations and graphs is excellent, and almost all figures and captions are self-explanatory. Experiments are carefully explained and evaluated. Real-world data sets are used in order to support the conclusions reached in the thesis.

The strength of this thesis lies in the breadth of its examination, which can be seen from the various techniques that had to be applied and combined in order to derive its main technical results: econometrics, data management, statistics, machine learning, pattern recognition, optimization as well as a thorough understanding of energy markets and flexibility concepts. The synthesis provided in this thesis is a significant scientific accomplishment and advancement of the state-of-the-art. The breadth of this thesis occasionally comes with a lack of depth; for example, it remains unclear how well the statistical forecasting methodology would generalize to other device-level data sets. Also, the state-of-the-art review could be more comprehensive; it often focuses on the application side, but doesn't go into much depth on the methodology. But this is probably unavoidable in a thesis which covers such a broad variety of topics.

The other main strength of the thesis is the multi-disciplinary nature in the sense that economical aspects are blended with more technical aspects. A prime example of this synergy is the evaluation of the predictive methods that were used not only in terms of precision and recall, but also in function of economic value. We are curious about whether the results are good enough to generate profit?

Oral presentation and discussion

The defense took place on 3rd November 2017, Aalborg, Denmark. It started at 13.00 and finished at 15.15. Bijay Neupane gave a presentation on "Predictive Data Analytics for Energy Demand Flexibility." The presentation was clear and gave a good overview of his work. The candidate gave a clear presentation of the results, with good use of examples and illustrations. The presentation covered all the main technical and scientific challenges presented in the thesis. The committee was very satisfied with the presentation.

The presentation was followed by questions from examiners. The candidate provided good answers to most of the questions from the committee, demonstrating his knowledge of the details involved. The committee was satisfied with the answers to the questions.

Conclusions

The papers included in the thesis are of good quality overall. Four papers have been published in high quality, peer-reviewed conferences and workshops, and one paper received the best paper award in the ACM e-Energy Conference 2017. Two other papers are under submission.

All papers fit well into the general context of the thesis outlined in the extended summary. The methods presented in the thesis clearly help advance the use of predictive analytics for detecting, extracting, and exploiting energy flexibility.

The candidate has clearly fulfilled the requirements for the degree of Ph.D. The committee unanimously recommends that Bijay Neupane is awarded the PhD degree.

Toon Calders	Mathieu Sinn	Bin Yang
3rd November 2017	3rd November 2017	3rd November 2017

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Institut for Elektroniske Systemer
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Dato: 7. november 2017

Til Forskerskolen
Att.: Lisbeth Diinhoff
N.J. 10

Vedrørende tildeling af ph.d.-grad til Chres Wiant Sørensen

Institut for Elektroniske Systemer indstiller at bedømmelsesudvalgets indstilling følges således at Chres Wiant Sørensen tildeles ph.d.-graden for sin ph.d.-afhandling "On Tunable Sparse Network Coding in Commercial Devices for Networks and Filesystems". Forsvaret fandt sted d. 3. november 2017.

Lektor Daniel E. Lucani været hovedvejleder for Chres Wiant Sørensen.

Med venlig hilsen

Børge Lindberg

Børge Lindberg

Institutleder

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Date: 03-11-2017

Final Assessment of a PhD Thesis

Date: 3rd November, 2017.

Final assessment of the PhD thesis entitled

On Tunable Sparse Network Coding in Commercial Devices for Networks and File-systems

submitted by Chres Wiant Sørensen

The assessment committee consists of the following members as decided by the Dean of the Technical Faculty of IT and Design.

Professor Sergio Palazzo
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Professor (MSO) Jan Østergaard
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Supervisor for the thesis has been Associate Professor Daniel E. Lucani, Aalborg University.

Co-supervisors for the thesis have been Prof. Muriel Medard, MIT, USA and Prof. Frank H.P. Fitzek, Technische Universitat Dresden, Germany.

Short resume of the thesis

The thesis takes the form of a collection of four research papers and an additional four regular chapters. The four regular chapters are: Introduction, Thesis Outline, Thesis Contribution, and Conclusion.

The four research papers are:

Paper A: Chres W. Sørensen, Arash S. Badr, Juan A. Cabrera, Daniel E. Lucani, Janus Heide, Frank H. P. Fitzek, "A practical view on tunable sparse network coding," *European Wireless (EW)*, 2015. □

Paper B: Chres W. Sørensen, Achuthan Paramanathan, Juan A. Cabrera, Morten V. Pedersen, Daniel E. Lucani, Frank H. P. Fitzek, "Leaner and meaner: Network coding in SIMD enabled commercial devices," *IEEE Wireless Communications and Networking Conference (WCNC)*, 2016.

Paper C: Chres W. Sørensen, Daniel E. Lucani, Frank H. P. Fitzek, Muriel Mé- dard, "On-the-fly overlapping of sparse generations: A tunable sparse network coding perspective," *IEEE Vehicular Technology Conference (VTC)*, 2014. □

Paper D: Chres W. Sørensen, Daniel E. Lucani, Muriel Médard, "On network coded filesystem Shim: Over-the-top multipath multi-source made easy," *IEEE International Conference on Communications (ICC)*, Accepted, 2017. □

Assessment of the thesis

Chres Wiant Sørensen's thesis is structured in two main parts, the first outlining motivations, research activities, and major results, the second collecting four selected papers, all of which being presented in prestigious conferences. More specifically, in the first part the candidate describes the activities carried out in the last three years in the field of tunable sparse network coding, with the aim of investigating and evaluating the performance of this approach as compared to other techniques like Random Linear Network Coding and Overlapping Generations, and the impact of its usage in a variety of devices ranging from embedded devices to smartphones and computers. As a valuable aspect, the overall work of the candidate is based on a comprehensive methodology that encompasses mathematical analysis of sufficient depth, remarkably competent design and implementation in practical settings, and thorough measurement campaigns.

Out of the papers included in the thesis, the first outlines the main features of Tunable Sparse Network Coding (TSNC) and investigates the complexity and delay of a real-life implementation of TNSC in the Kodo C+11 network coding library. In particular, this implementation allowed the authors to run a set of measurements and characterize the performance of TSNC as compared to Random Linear Network Coding and Sparse Random Linear Network Coding. One of the most insightful results was showing that the complexity-delay trade-off can be significantly improved by the use of a limited number of feedback packets per generation.

The second paper enhances the results of the previous one, by providing a comparison of measurements obtained upon eight different commercial devices, and focusing on optimization of network coding schemes for Single Instruction Multiple Data (SIMD) available in the latest generation of Intel and Advanced RISC Machines (ARM) processors. The measurement campaign carried out showed that reducing the code density can also reduce the energy footprint since sparser codes are processed faster, and the use of hardware optimization already provided in today's

Intel and ARM processors can deliver order of magnitude processing speed-up and energy-per-bit reduction as well.

The third paper focuses on a TSNC-inspired approach to Overlapping Generations, which can potentially be useful in multicast and multi-source applications, that is, transmitting to multiple receivers and receiving from multiple sources. Specifically, the paper advocates that exploiting sparse coding instead of RLNC, and leveraging occasional feedback are beneficial to realize "on-the-fly" overlapping generations, so providing a low-complexity and low-overhead solution. The measurements obtained showed that the proposed approach can provide close-to-optimal delay performance, while reducing the processing effort by orders of magnitude in real systems.

Finally, the fourth paper introduces a novel solution to implement network coding in a protocol stack, encompassing a "network-coded filesystem shim" (NCFSS) which is aimed to expand regular and even proprietary protocols with benefits from coding. The idea is supported by a proof-of-concept implementation in C++ using the FUSE library. The results obtained through the experimental set-up showed not only that coded filesystems can be deployed to support other high-level protocols (e.g., HTTP, SSH), but also that in the proposed solution file access and download time experienced by multiple sources are faster than in traditional approaches.

Oral presentation and discussion

3rd of November, 2017: Aalborg University.

The presentation by the PhD student was very clear, fluent, and visually appealing. The candidate provided a good overview as well as an adequate level of detail about his thesis work. During the discussion, the PhD student received questions both within the topic of his thesis as well as questions related to prior related work within the fields of network coding and communications. The candidate answered with confidence the questions directly related to the thesis, and he demonstrated good capabilities in handling complex questions outside the specific topics of the thesis. In general, the candidate demonstrated his ability to conduct a scientific discussion and to illustrate the main findings of his work.

Conclusions

The work reported in the thesis shows that the candidate has a good capacity to carry out research activities thoroughly and autonomously, and definitely owns the scientific level that is requested to pursue the PhD degree.

The particular strength of the work carried out in this thesis is in the capability of the candidate to bring novel network coding concepts from research to development phase and to test the working prototypes in near-real world environment. It is worth noting that the primary contribution of the thesis is not in theoretical advances of network coding but in efficient implementations and development aspect of network coding technology.

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The committee members agree that the quality of the oral presentation and the response to questions in terms of clarity and accuracy is adequate.

The assessment committee unanimously recommends that Chres Wiant Sørensen is awarded the PhD degree.

Professor Sergio Palazzo

Associate Professor Dejan Vukobratovic

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Dato: 17-11-2017

The Technical Doctoral School of It and Design
Niels Jernes Vej 10

Vedr. "Projektets logik – den offentlige sektors paradox", af Christina Dahl Madsen, Institut for Planlægning

Hermed fremsendes bedømmelsesudvalgets Final Assessment vedr. ovennævnte ph.d. afhandling.

Instituttet anbefaler, at bedømmelsesudvalgets indstilling følges, og at Christina Dahl Madsen tildeles ph.d. graden.

Med venlig hilsen

Marianne Sørensen

AALBORG UNIVERSITY
DENMARK

Final assessment of the PhD thesis entitled:

"Projektets logik – den offentlige sektors paradox" (Submitted in Danish)

"The logic of the project – a paradox in public administration"

Submitted by Christina Dahl Madsen, MA in Learning and Change Processes

The assessment committee consists of the following members as decided by the Dean of the Technical Faculty of IT and Design by 09.08.2017:

- Professor Lutz Mez, Freie Universität Berlin, lutz.mez@fu-berlin.de
- Associate Professor Jan Jaap Rothuizen, VIA University College, jjr@via.dk
- Associate Professor Jette Egelund Holgaard (chairman): Aalborg University, jeh@plan.aau.dk

Supervisor for the thesis has been Professor Lars Bo Henriksen, Aalborg University.

Description of the thesis
The thesis is presented as a monograph including 248 pages, plus appendixes (including confidential material). The monograph includes 7 chapters.

Chapter 1 presents the motivation, the theoretical starting point, the problem formulation and the structure of the thesis. A critical sociological perspective motivates the core dilemma addressed in the thesis stating that public administration is being confronted with demands of increasing efficiency and documentation on the one hand, and demands for increasing quality, creativity and innovation on the other. Projects, partnerships, co-construction and cross-organizational networks are presented as some of the organization trends, which are in play to bridge this gap.

This leads to the research question (Christensen, 2017, 30):

> "How is the project concept applied as a form of organising and collaborating in the public administration in Denmark, and how do cross-organisational networks and partnerships in projects constitute a complex challenge as well as a potential arena for possibilities for the future public administration, as a collective learning organisation"

The "Volunteer Project" initiated in 2011 by the management of Aalborg Youth School is then presented as a possibility to study the complexity of cross-organizational projects.

Chapter 2 presents the methodological framework for the study. The chapter starts with an introduction to action research as the outset, and institutional ethnography is proposed as complementary analytical strategy (p. 48, introduced in chapter 1). The chapter quite early introduces the approach of Czarniawskas anthropological field studies as being of high influence for this study. It is argued that action research is an appropriate approach in order to provide rich explanations of the processes in a cross-organizational project, by observing and being in interaction and dialogue with the field. Furthermore, the material is supplemented with expert insights from a study abroad. The data-collection includes a combination of 20 semi-structured interviews and observations/recordings of inventions made in the field (p. 55). As for the data processing, the inspiration from institutional ethnography raises attention to the importance of language, language games and

storylines. Last but not least, the challenges of action research are discussed, and CM presents a model in order to outline and distinguish the different positions she, as an action researcher, is engaged in (p. 67).

Chapter 3-5 follows the same structure, starting off by providing a critical sociological perspective, which is then used as a frame of reference in the interpretation of the empirical findings which is structured according to Røvik's three phases of:

- Context and motivation (kontekst og motivation) – where the idea of the volunteer project meets the logic, history and practice of the organization (Chapter 3).
- Phase of integration (indføringsfase) – where the project over time is integrated in the social practice (Chapter 4)
- Phase of translation (oversættelsesfase) – where the actors acknowledge and adopt concepts and approaches used in the project as meaningful to the local community context as well as to the core output of the organization (Chapter 5).

Chapter 3 presents the story of how the Volunteer project in the organization Aalborg Youth School is initiated. The analysis shows that the project was well aligned with the logic and history of the organization as well as management visions. On the other hand, the project divides the rest of the organization in two. Some seem to be demotivated by, or motivated to work against, the project as it is seen as a symptom of management lacking understanding of local needs. Others actually find that the project relates to current practices, e.g. by linking to the volunteer concept, to project work practices, or to personal relations.

Chapter 4 focuses on the matter of integration exemplified by one of the pilot projects in the Volunteer project called "Create yourself" ("Skab dig"). The analysis of this project outlines language games between a manager being impatient and protective of his dream and people having the insight to point to the challenges of implementation. But it also tells a story about a project, which is successful in delivering results and gathering a group of people who are engaged in the project – sometimes however of reasons not that related to the project. It also shows how people might relate very well to the cross-organizational dimension – and then based on their engagement with the cross-organizational project redraw to create their own project.

Chapter 5 focuses on the translation phase of a project called "The college project" ("Seminarie projektet"). The story unfolded presents a situation where a key partner in the project is not able to translate the project in a meaningful way to the local context, and a manager who is not willing to accept that translation processes is needed and has to be supported. Room for ownership and engagement from some of the participants "to make things work" actually brings the project back on track, but one (however serious) disruption is all it takes for the project to vanish. Another key partner is however capable of making this translating process, and familiarity with Problem Based Learning is used as a potential explanation. Together with the outcome of chapter 4, this forms the base for adding to theoretical framework by introducing the term: translations conditions.

In Chapter 6, the learning from the above stories are gathered and creates a knowledge base for developing a model of "Conditions for the learning community" The model has three dimensions stressing:

1) Story and Management (Story og Styring) to stress the importance of contextual factors around what ever the organization want to have initiated, implemented, developed or changed, but also the work needed to align the cross-organizational project objectives with the core output of the organization and ending the story in a "proper" way.
2) Time and Patience (Tid og Tålmodighed) to encounter the difference between the logic embedded in the discipline society compared to the project society. Conditions and premises are different, and it is argued that the project needs to be able to move agile, flexible and crosscutting in the organization, which contradicts the call for fast implementation and standardization. Madsen stresses that time and patience will provide room to actual identify real (reelle og faktuelle) needs that the project is to address.

3) Reflective relations (Reflekterende relationer) are stressed due to the situation of sometimes decoupled or fragmented organizations, where members exist as organizations in the organization. Madsen calls for a reflection on the structure for knowledge exchange and learning with the purpose of getting the projects into the storyline of the organization.

Chapter 6 ends with a reflection on the concept of volunteers and questions whether what was found overseas and inspired the "Volunteer Project", could in fact have been found in the history of the Youth School as a continuation of the organizational storyline.

Chapter 7 concludes the thesis in relation to the overall research question.

Assessment of the thesis

The thesis is well written and is based on a solid empirical foundation. The storyline presented shows considerable insights of being "in the field" and abilities to carefully navigate in the continual dataflow this provides. The richness of the empirical material makes it possible to describe every day challenges in a cross-organizational project. This endeavor to make rich data based on field studies includes a time-consuming data-collection and –processing and this comprehensive work is acknowledged by the assessment committee. Furthermore, the thesis also shows the ability of the researcher to reflect on and exemplify the challenge of being in a position as a trusted newly hired employee and a critical researcher.

The thesis however also has some weaknesses, and it can be argued that this is mostly due to a too ambitious research design. The research question encounters both challenges and potentials in the context of a project society, whereas the theoretical framework is not providing this balance. This means that when occasionally the empirical material shows potentials (and not challenges), there is no resonance in the theoretical framework as it is presented. In these cases, discrepancy with the critical sociological perspective might be noticed, or other theoretical areas are visited rather sporadic, like in the case of communities of practice (CoP) and Problem Based Learning (PBL). The methodological design also stands out as too ambitious in the attempt to combine different approaches in an action research setting. Based on different theoretical approaches to action research, the methodological design calls for different positions as explained (p. 67-68): the co-constructive position, the sensing position and the meta-reflective position. However, in reading the thesis, it seems that the co-constructive position is not used for systematic analysis. The complexity of the field and the complexity of the methodological design could have justified a more systematic and concluding reflection on the strengths and weaknesses of this design. Finally, it can be argued whether the theoretical voices of critical sociology have been given too much voice, and even sometimes, indications of a deductive approach are present, making the alignment with the social constructivist perspective questionable.

However, looking at the findings, the arguments put forward from a critical sociological perspective about the current change to the project society are supplemented by concrete storylines of everyday dilemmas. The resonance these storylines provided is the first step to reflect on how everyday actions and agency, translations and translation conditions, can impact organizational and even societal change. Thereby, not only the actions taken during the study but also the following meta-analysis can have implication on actual practice. In this way, the intention rooted in the action research project has served its purpose. Furthermore, Madsen succeeds in making a synthesis of the identified challenges and presents a model, which can serve as a framework for discussing, how key challenges can be overcome in other contextual settings.

Oral presentation and discussion
At the defense, Madsen presented an overview of the thesis content in a living and including way. In the academic discussion Madsen showed considerable strengths in exemplifying theoretical constructs by use of empirical material. The assessment committee would however have liked more conceptual precision related to theories and methods. Overall, Madsen answered satisfactory to most of the questions raised by the assessment committee.

Conclusions

The thesis is well written and is based on a solid empirical foundation. The storylines report everyday practice in a way, which can inspire reflections on organizational change in the public administration. Madsen furthermore succeeds in making a synthesis of the identified challenges and presents a model, which can serve as a conceptual framework for implementation of educational projects and for inquiries of organizational structures and dynamics.

At the defense, Madsen presented an overview of the thesis content in a living and including way, and in the following academic discussions Madsen answered satisfactory to most of the questions raised by the assessment committee.

The committee therefore unanimously recommends that Christina Dahl Madsen is awarded the PhD degree.

10.11.2017

Lutz Mez

Jan Jaap Rothuizen

Jette Egelund Holgaard

AALBORG UNIVERSITET

Cassiopeia

Det Teknisk Naturvidenskabelige Fakultet
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Att.: Bettina Wedde

8 november 2017

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Helle Schroll
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Ph.d.- forsvar Dilshod Ibragimov,

Vedlagt fremsendes underskrevet indstilling for Erasmus Mundus ph.d. studerende Dilshod Ibragimov, som forsvarede sin ph.d. afhandling den 15. november 2017 på ULB, Bruxelles.

Best regards

Helle Schroll

AALBORG UNIVERSITY
DENMARK

Assessment of the PhD thesis entitled:

Optimizing Analytical Queries over Semantic Web Sources

Submitted by Dilshod Ibragimov

The assessment committee consists of the following members as decided by the Dean of the Technical Faculty of IT and Design on 2017-08-09:

- Professor Maria-Esther Vidal Universidad Simón Bolívar, Venezuela, mvidal@usb.ve
- Professor Ladjel Bellatreche National Engineering School for Mechanics and Aerotechnics (ENSMA), France, bellatreche@ensma.fr
- Associate Professor, Kristian Torp (chairman),Aalborg University, Denmark, torp@cs.aau.dk

Supervisor for the thesis has been.

- Professor Esteban Zimányi Université Libre de Bruxelles, Belgium
- Professor Torben Bach Pedersen Aalborg University, Denmark

Co-supervisor for the thesis has been.

- Associate Prof. Katja Hose Aalborg University, Denmark

Description of the thesis
The thesis is based on a collection of papers and is 121 pages + xii. The thesis is based on the following papers where coauthor statements have been submitted.

- Dilshod Ibragimov, Katja Hose, Torben Bach Pedersen, and Esteban Zimányi. Towards Exploratory OLAP Over Linked Open Data - A Case Study. In International Workshops on Enabling Real-Time Business Intelligence (BIRTE), Riva del Garda, Italy, 2013, and Hangzhou, China, 2014, Revised Selected Papers, pages 114–132.
- Dilshod Ibragimov, Katja Hose, Torben Bach Pedersen, and Esteban Zimányi. Processing Aggregate Queries in a Federation of SPARQL Endpoints. In 12th European Semantic Web Conference, (ESWC 2015), Portoroz, Slovenia, pages 269–285, 2015.
- Dilshod Ibragimov, Katja Hose, Torben Bach Pedersen, and Esteban Zimányi. Efficient Support of Analytical SPARQL Queries in Federated Systems. In preparation for a conference submission.
- Dilshod Ibragimov, Katja Hose, Torben Bach Pedersen, and Esteban Zimányi. Optimizing Aggregate SPARQL Queries Using Materialized RDF Views. In 15th International Semantic Web Conference, (ISWC 2016) Kobe, Japan, pages 341–359(1), 2016

Assessment of the thesis

Overview

The thesis makes advances in the area of Data Management in Web-based infrastructures by tackling the problem of analytical processing over RDF data accessible using SPARQL endpoints. RDF data sources can be large and composed of incomplete data; furthermore, these sources may also include implicit facts, which required the execution of reasoning processes to make explicit entailed facts. All these characteristics of RDF data negatively impact on the time complexity of query processing tasks, and make traditional query processing approaches unsuitable in presence of complex queries and large RDF data sources.

The manuscript is organized into six chapters that clearly present the foundations and motivation of the problem of query processing over Web data published as Linked Data, as well as limitations of existing approaches, the proposed query processing strategies, formal and empirical evaluation of the proposed techniques, and lessons learned and future work. The list of references includes relevant and recent articles from top ranked international conferences and journals in the areas of Databases and Semantic Web on the topics of Data Management, Linked Data, and Web query processing.

Chapter 1

This chapter positions the studied problem and its contexts, identifies its difficulties and exposes the main contributions and the structure of the different chapters. The query processing problem tackled in this thesis is clearly motivated in the context of Web data published as Linked Data. Advantages and limitations of existing approaches, as well as the problem statement and scope of the dissertation are stated in this chapter. Finally, the research questions that guide this thesis, contributions, referred publications, and main results are precisely described

Chapter 2

This work is motivated by two points: (i) in the last decades, semantic data sources have emerged and become operational databases, since the major database editors provide semantic supports in their products. This is mainly due to the spectacular development of ontologies and knowledge bases such as Yago, DBpedia, Freebase, etc., in several domains like E-commerce, Engineering, Medicine, etc. (ii) the maturity of the data warehousing technology and its surrounding tools. This technology succeeds in the closed-world, where data loaded in the warehouse are issued from internal sources with traditional structures. The Web phenomenon contributes in breaking the closed-world assumption. As a consequence, the traditional tools of data warehouses have to be leveraged to deal with RDF data. The candidate proposes then two main research contributions in this chapter: (i) the definition of multidimensional schema of an OLAP cube exclusivity in RDF. This schema is able to define a remote data source for querying during the OLAP analysis phase. (ii) the proposition of a computer aided process for discovering previously unknown data sources and building a multidimensional schema of the cube. These two contributions are illustrated based on a motivating example related to linked movie database (Linkded MDB) Website, which offers information about movies. The movie data can be queried using a SPARQL endpoint. The candidate presents a partial logical schema of LinkdedMDB and gives examples of SPARQL queries executed on the top of this schema. A conceptual schema of the data cube is also given. The candidate uses QB4OLAP and VoID to describe the multidimensional schema. To query this schema, SPARQL queries are needed to remote data endpoints for data retrieval. I would like to mention that the main hypothesis of this work is the assumption that the multidimensional schema of the OLAP cube and data sources are known in advance. An interesting discussion of data source discovery approaches is given, where three main categories are highlighted: (1) querying knowledge bases, (2) querying data management platforms, and (3) querying semantic Web search engines. A conceptual framework is presented, supported by a system consisting of four main modules: (1) semantic query processor, (2) distributed query processor, (3) global conceptual schema and (4) source/discovery/schema builder. The candidate reviews some existing studies based on three directions: semantic Web warehousing, source discovery and distributed Sparql query processing. This part of this chapter remains too verbose and the presence of a comparison using some relevant criteria would facilitate the understanding of these studies. I would like to mention that there exist several research efforts on Semantic web warehouses; and each one dealt with a particular phase(s) of the life cycle of the warehouse construction: (i) requirement elicitation, (ii) conceptual modeling, (iii) ETL, (iv) Logical modelling, (v) physical modeling and (vi) exploitation. The presentation of the studies of semantic web warehouses could be driven by the different phases of the life cycle to make it more clear and comprehensive.

Chapter 3

The problem of federated processing of aggregate queries over SPARQL endpoints is tackled in this chapter. Query processing against federations of SPARQL endpoints requires the achievement of several issues. First, queries need to be decomposed into subqueries that can be executed over the available relevant sources; next, optimization methods need to be executed in order to identify query execution plans that collect relevant data efficiently; finally, physical operators that allow for the efficient execution of these plans need to be selected and executed. The author addresses all these challenges and proposes federated query processing methods that rely on a cost model and novel physical operators to efficiently execute aggregate queries against SPARQL endpoints. Three physical operators are defined: MedJoin, SemiJoin, and PartialAgg; these operators allow for reducing the size of intermediate results, speeding up query execution. The query optimizer relies on a Cost-based Optimizer for Distributed Aggregate Queries (CoDA) to identify query plans that can be efficiently evaluated by the selected SPARQL endpoints. CoDA takes into account not only the cost of executing the queries over the selected sources, but also the cost of transferring data and aggregating the results; considering all these parameters allows CoDA to precisely estimate the cost of executing a query. Furthermore, data collected from the endpoints is merged by the federated engine using the MedJoin operator; this operator enables the federated query engine to evaluate very selective subqueries, reducing thus the workload of the SPARQL endpoints and the size of the intermediate results. The proposed federated query processing methods are evaluated over SSB, a very well-known benchmark proposed by the Database community; datasets of different sizes are evaluated in the study, as well as 13 queries of different complexity. The Virtuoso engine is considered as the baseline of the experiment; different versions of the proposed engine where CoDA is not considered, are also included in the study. The experimental results suggest that the proposed federated cost-based query engine is able to efficiently execute aggregated SPARQL queries, and overcome the baseline engines and the other proposed methods.

Chapter 4

This paper proposes OLAP-style AnalytIcs in a FederaTion of SPARQL Endpoints (LITE). This is because usually users are looking for combining partial data extracted from various endpoints. This requirement is illustrated by two examples showing the necessity of managing the problem of data source heterogeneity and the absence of hierarchies in these sources matching with the user hierarchies. Three main contributions of this paper are: (1) the proposition of a native RDF/SPARQL -based approach for efficient support of analytical queries over federations of Sparql endpoints; (2) the proposition of an extended vocabulary for specifying the mapping between multidimensional global schema located at the mediator side and local schemes of sources; (3) and rewriting algorithm of sparql queries that takes into account hierarchical information encoded in RDF schema. LITE models source and target schemas as RDF schema graphs that highlight the structures of the data available for the analysis. Several experiments are conducted showing the efficiency of analytical queries in a federated set up, by considering the Star Schema Benchmark. This motivation of using such benchmark is the absence of standard SPARQL benchmarks applicable to the studied problem.

Chapter 5

The problem of SPARQL query answering based on RDF views is tackled in this chapter. Considering RDF views during planning and execution of queries is an important problem, which has been extensibly studied by the database community because enables query engines to execute queries over materialized views. Although there are efficient approaches from the database community, the problem of query answering using RDF views imposes new challenges to enforce efficient and effective query executions. The author focuses on analytics SPARQL queries and presents MARVEL a query engine able to execute SPARQL queries against a set of RDF views. The novelty of MARVEL is that materialized views are seen as named graphs described as SPARQL queries; materialized views are physically executed and the results are stored in a triple store. MARVEL implements an algorithm for selecting the views required to answer a query as well as for rewriting the query based on these views. MARVEL is empirically evaluated using RDF collections from three state-of-the-art benchmarks: BSBM, LUMB, and SSB; the impact of using materialized views is evaluated in the study. Empirical

results provide evidence that MARVEL query processing techniques are able to speed up execution time in queries and RDF views with different characteristics. More importantly, the reported results allow for understanding the impact on query processing of precomputing intermediate query results in materialized views.

Chapter 6

The last chapter concludes the manuscript summarizing the main contributions and discussing the strong points and the limitations. As highlighted by the author, SPARQL analytical query processing can be performed over Linked Data efficiently. Several perspective issues are also given, which shows the quality and difficulty of the subject studied.

Oral presentation and discussion

The presentation of the thesis and subsequent oral defense took place at Libre de Bruxelles, Belgium, Wednesday November 15, 2017. The title of the oral presentation was "Optimizing Analytical Queries over Semantic Web Sources" and Associate Professor Kristian Torp served as moderator of the event that started at 14.10 and ended at 16.25.

The candidate gave a clear presentation of the results, with good use of examples and illustrations within the area of aggregated SPARQL queries over federations of linked datasets. The presentation captured the interest of the audience, and covered all the main technical and scientific challenges presented in the thesis. The committee was highly satisfied with the presentation.

In the discussion following the presentation, the candidate provided good answers to all of the three rounds of questions from the committee. The answers were clear and covered many technical aspects in the areas of query processing and optimization. The candidate was able to provide explanations of advanced topics even beyond the scope of the thesis. The committee was highly satisfied with the discussion.

Conclusions

Overall the manuscript is well-written and clearly motivates and presents the tackled problems, as well as the proposed formalisms, strategies, and algorithms. The manuscript also states the main characteristics of the proposed approaches; and with empirical evaluations, the behavior of the proposed techniques are validated and compared with existing approaches in terms of efficiency and effectiveness. Thus, this work is not only novel, but also puts scientific and technical contributions in perspective, and provides evidence of the contributions that are made to the state-of-the-art.

Dilshod Ibragimov has demonstrated his versatility by addressing a complex research problem related to the exploitation of Semantic Data Warehouse in a Federated Set up. We would like to highlight the quality of the work performed. This thesis represents a large body of work tacking a set of complex problems such as data integration, execution queries over mediator, mathematical cost model development, query rewriting, materialized views selection, etc. All these problems consider the specificities of Web data (open world assumption, incompleteness of data and the need to support derived information). We would like to mention the efforts deployed by the candidate in terms of experimentations. The publications that the thesis is based on are of good quality: The ISWC and ESWC are both ranked A by CORE 2017 and BIRTE Workshop.

In conclusion, Dilshod Ibragimov significantly contributes to state-of-the-art within semantic data warehouse exploitation and optimization. Further, the thesis meets the conditions of novelty, soundness, and innovativeness required in a doctoral dissertation. The committee unanimously recommends that Dilshod Ibragimov be awarded the Ph.D. degree in computer science.

Professor Maria-Esther Vidal | Professor Ladjel Bellatreche | Assoc. Professor Kristian Torp

Fortegnelse over bedømmelsesudvalg til
stilling Professor in Human Geography (60230) ved PLAN

Navn: Professor Henning Sten Hansen
Arbejdssted: PLAN, AAU
E-mail: hsh@plan.aau.dk

Navn: Professor Gunnel Forsberg
Arbejdssted: Stockholms Universitet
E-mail: gunnel.forsberg@humangeo.su.se

Navn: Professor Lars Winther
Arbejdssted: KU
E-mail: lw@ign.ku.dk

Akademisk Råd har taget stilling til, at medlemmer af bedømmelsesudvalget er sagkyndige inden for stillingsområdet på et niveau, der mindst svarer til det, der forudsættes for stillingen, dog ikke under lektorniveau.

Professor in Human Geography (60230)

Position No.
60230

At the Technical Faculty of IT and Design, Department of Planning, Aalborg a position as Professor in Human Geography is open for appointment from 1.8.2018 or soon hereafter.

The Department of Planning conducts research and teaching on development and planning in a broad sense, including social science aspects as well as more technical aspects of development, and with a focus on environmental, international as well as administrative dimensions. The Department offers bachelor and master's programmes in geography, planning and surveying.

Job description

The position requires research qualifications at Doctor level within the field of human geography.

The Department of Planning wishes to strengthen its research portfolio and develop its bachelor and master's programmes within the field of human geography. As Professor you are expected to provide leadership in both research and teaching.

The Department wishes to appoint a researcher with a strong academic and professional international network within the field of geography and an ability to attract research funding and manage larger research projects. As Professor you are expected to develop a strong research profile within human geography. Research areas may include the areas of urban geography, social and political geography or cultural geography.

As Professor you are expected to play a leading role in teaching and the development of curriculums for the B.Sc. and M.Sc. programmes in Geography. However, you may also be involved in teaching at other study programmes at the University.

As Professor, the main responsibility will be to build up a research agenda within the field of human geography in an interdisciplinary department. Furthermore, the responsibilities will be to

- Build up a research environment in human geography at the Department of Planning
- Attract external funding to establish a research agenda with international impact and visibility
- Provide leadership for the bachelor and master's programme in Geography at the Department of Planning
- Actively engage with internal and external research environments and beyond in order to strengthen Aalborg University's position within the field of human geography

You may obtain further professional information from Associate Professor Kristian Olesen, +45 93562364, kristian@plan.aau.dk.

Qualification requirements:
The successful applicant can demonstrate a documented high level of original scientific production at an international level, including proven further development of the research area in question. An assessment of the candidate's undertaking of research management and/or other possible management functions will also be taken into account. In addition the applicant is expected to have the qualifications required for undertaking teaching responsibilities. Special contributions to and development of educational and teaching related areas will be considered in the overall assessment.

The application must contain the following:

- A motivated text wherein the reasons for applying, qualifications in relation to the position, and intentions and visions for the position are stated.
- A current curriculum vitae.
- Copies of relevant diplomas (Master of Science and PhD). On request you could be asked for an official English translation.
- Scientific qualifications. A complete list of publications must be attached with an indication of the works the applicant wishes to be considered. You may attach up to 10 publications.
- Teaching qualifications described in the teaching portfolio. If this is not enclosed the applicant must include an explanation for its absence.

- Dissemination qualifications, including participation on committees or boards, participation in organisations and the like.
- Additional qualifications in relation to the position.
- References/recommendations.
- Personal data.

The applications are only to be submitted online by using the "Apply online" button below.

An assessment committee will assess all candidates.

For further information concerning the application procedure please contact Nickie Kate Hermansen by mail nkh@adm.aau.dk or phone (+45) 9940 7902.

Information regarding guidelines, ministerial circular in force, teaching portfolio and procedures can be seen here.

Workplace
Aalborg

Agreement
Appointment and salary acc. to the agreement between the Ministry of Finance and the Danish Confederation of professional Associations (AC) on Academics in the State. Employment as Professor is in accordance with a classified position on scale 37. In addition, a pensionable increment will be given.

Deadline
15/01/2018

Apply online

Aalborg University (AAU) conducts teaching and research to the highest level in the fields of humanities, engineering, and natural, health, and social sciences.

top

Curriculum vitae:

Name:	Gunnel Forsberg
Date of birth:	January 3, 1950,Bollnäs, Sweden
Address:	Islandsgatan 10, 753 08 Uppsala
Nationality:	Swedish

Academic career:

1975	Bachelors of Science, Uppsala Universitet
1989	PhD in Human Geography, Uppsala University *(*Dissertation title: *Industrial change and Gender Structure. Case Studies on four Local Labour Markets)*
1995	Associate Professor at the Faculty of Social Science, Uppsala University.

Academic positions:

1976-1979	Research assistant, Swedish University of Agricultural Sciences (SLU), Uppsala
1980-1981	Research assistant at the Swedish Centre for Working Life, Stockholm
1981-1985	Teaching assistant at dep. of Human Geography, Uppsala University
1922-1985	Research assistant at the Swedish Centre for Working Life, Stockholm (50%)
1985-1990	Research assistant at the Swedish Centre for Working Life, Stockholm (100%)
1990-1991	Researcher at Dep. of Human Geography, Uppsala University
1991-1998	Senior lecturer, Dep. of Human Geography, Uppsala University
1998-2017	Full Professor, Dep. of Human Geography, Stockholm University 100% (during 1999-2005: 50%)
1999-2005	Visiting Professor at Centre for Gender studies, Karlstad University 50%
2009 – 2010	Professor II In feminist Human Geography, Högskolen i Finnmark, Alta, Norway 20% ,.
2017	Senior professor, Dep. of Human Geography, Stockholm University 100%

Publications

Parental leave:

1979 – 1980
1986 – 1987

University assignments (selected)

2011-	Deputy Dean of the Faculty of Social Science, Stockholm University.
1998-	Chair of the Committee of Swedish University School of Planning, Stockholm University.
2011-	Chair of the board for Appointing Professors, Faculty of Social Scences, Stockholm University.
1998-	Representative of Carl Mannerfeldts scholarship fund, Stockholm University.
2007- 2011	Head of Department at Department of Human Geography, Stockholm University.
1999- 2005	Director at the Centre for Gender Studies, Karlstad University.
2003- 2005	Chair of the board for Associate professors, Karlstad University.

Project leadership (selected)

1994-1997	Project leader for "The countryside of Mälar region in Transition", Uppsala University, Funded by Riksbankens Jubileumsfond 1.300.000.
1994 - 1997	Project leader for "Gender and Regional Variations", funded by Forskningsrådsnämnden. Dnr 962012 A 18-5/479, 1.231.000.
1998 - 1999	Regioner för kvinnor och män. Om vardagens villkor i välfärden. Uppsala University, 200.000.
1997 - 2000	Project leader for Strategier för planering i dynamiska landsbygder. Forskningsrådsnämnden drn 690.0084/98, 500.000.
1999 - 2005	Programme leader for "Gender Relations on the Move" Karlstad University, , funded by samhällsvetenskapliga fakulteten, Karlstad universitet and Länsstyrelsen i Värmland. 2.000.000.
2001 – 2004	Den ekonomiska geografin ur ett köns/genusperspektiv. Funded by FAS, drn 2001-0051. 1.375.000:-
2002 - 2006	Project leader for "Changes and Development in the Region of Inner Scandinavia", Karlstads University, funded by EU:s INTERREG III. Drn IS 3041-119-02. 3.000.000.
2002 - 2005	Project leader for "Innovative Entrepreneurs in the Caring Sector. Innovation Systems in a Gender Perspective" funded by VINNOVA and Sveriges Kommuner och Landsting. Drn 2002-02926. 1.2000.000.
2004 - 2008	Project leader for icke-heterosexuellas villkor I arbetslivet "Homosexuals at work", Karlstads Universitet, funded by FAS. C2003/165, 2.800.000.
2006 - 2010	Project leader for "Innovationssystem och homosociala strukturer", (Innovation systems and Homo-social structures) in collaboration with prof. Gerd Lindgren, Karlstad University, funded by VINNOVA dnr 2005-00729. 3.500.000.
2007 - 2011	Project leader for "Gender and Rural Life—Creating Gendered Ruralities", funded by Vetenskapsrådet, Dr 421-2006-2290. 1.800.000.

2008 - 2013 Project leader for "When the world goes rural", funded by FORMAS. Dnr 251-2007-2019, 5 265 000.

External assignments (selected)

1994-1998 Member of the expert panel at RALF (Swedish board for Labor research.
2005-2010 Member of the Board of Swedish Secretariat for Gender Research, Gothenburg University.
2002-2006 Member of the expert panel at FORMAS (, (2004-2006 chair of the Committee)
2000 – 2005 Member of the Scientific Board of Swedish National Rural Development Agency, Östersund.
2001 -2012 Member of the Scientific Board of the Office of Regional Planning and Urban Transportation, Stockholm County.
2001 -2013 Member of the editorial board of the journal PLAN.
2006 -2012 Member of the Scientific Board for the Swedish Association of Local Authorities and Regions.
1990-2010 Expert (consultant) at the IM-Group in Uppsala.
2008 Chair of the board for Preparing Committee for the European fund for "Urban-Net".
2006-2012 Member of expert panel for Humanities and Social Sciences, Vetenskapsrådet.
2014 Member of the board for formulating the 10-year Program for Demokratisk og effektiv styring, planlegging og forvaltning (DEMOS), Norska Forskningsrådet.
2015- Member of Det konglige Norske Videnskabers Selskabs Akademi.
2015 Chair of the Swedish Higher Education Authority's pilot assessment of doctoral education at Linköping university.

Publications (selected)

Monographs and Readers

Forsberg, G & Lindgren, G (red), 2010, *Nätverk och Skuggstrukturer i regionalpolitiken.* Karlstad University Press. Karlstad.

Berger, S. Forsberg, G & Ørbeck, M. (red), 2007, *Inre Skandinavien – en gränsregion under omvandling.* Karlstad: Karlstad University Press

Forsberg, G, Grimsrud, G.; Jakobsen, L.; Jansdotter, M. & Vangsgraven Stubberud, K., 2006, *Gränsfall. Platsens betydelse för omställning och utveckling i en gränsregion.* Nordregio, Stockholm.

Forsberg, G., (red), 2005, *Planeringens utmaningar och tillämpningar.* Uppsala Publishing House, Uppsala.

Forsberg, G & Grenholm C. (red) 2005, *... och likväl rör det sig. Genusrelationer i förändring.* Karlstad university Press.

Berger, S., Forsberg, G. & Ørbeck, M. (red) 2004, *Atlas över Inre Skandinavien – Befolkning, näringsliv och livsmiljö,* Karlstad University Studies, 2004:66, Karlstad.

Forsberg, G 2003, *Genusforskning inom kulturgeografi - en rumslig utmaning.* Högskoleverket, Stockholm.

Forsberg, G, Jakobsen, L & Smirthwaite, G., 2003, *Homosexuella i arbetslivet* – Arbetsrapport, Karlstad: Genusvetenskap, Karlstads universitet.

Forsberg, G., Grenholm, C & Jakobsen, L. 2002, (red.) *Rum – upplevelsevärd – samhälle. Rapport från forskarkursen "I genderiserade rum"*. Karlstad University Studies 2002:20, Karlstad.

Genusrelationer i rörelse: Ett forskningsprogram, 2001, Forskargruppen för genusvetenskapliga studier, Jämställdhetscentrum, Karlstads universitet.

Amcoff, J., Forsberg, G.& Stenbacka, S., 1995, *Inflyttning och nybyggnation i Mälardalens landsbygd*, Delrapport inom projektet Mälardalens landsbygd i förändring. Arbetsrapport nr 155, Kulturgeografiska inst. Uppsala Universitet.

Forsberg, G. (red) 1994, *Befolkningsomflyttningar på landsbygden. Kunskapsöversikt och statistisk analys.* Delrapport inom projektet Mälardalens landsbygd i förändring Arbetsrapport nr 55, Kulturgeografiska inst. Uppsala Universitet.

Forsberg, G. & Carlbrand, E., 1993, *Mälarbygden - en kreativ region? En studie av Mälardalens landsbygd i förändring.* Forskningsrapporter från Kulturgeografiska institutionen, Uppsala universitet, nr 107.

Forsberg, G., 1989, Industriomvandling och könsstruktur. Fallstudier på fyra lokala arbetsmarknader. *Geografiska regionstudier Nr 20.* Kulturgeografiska institutionen vid Uppsala Universitet. (Avhandling)

Scientific articles in Journals and Readers

Stenbacka, S; Grubbström, A & Forsberg, G., 2017, Gendered youth strategies for inclusion in a changing society: breaking or reproducing the local gender contract? Area. Doi: 10.1111/area.12392

Forsberg, G & Stenbacka, 2017, Creating and Challenging gendered spatialities: How space affects gender contracts. *Geografiska Annaler Series B, Human Geography*, doi.org/10.1080/04353684.2017.1303269

Forsberg, G & Stenbacka, 2017, How to improve regional and local planning by applying a gender-sensitive analysis: examples from Sweden. *Regional Studies.* doi.org/10.1080/00343404.2017.1296942.

Lagerqvist, M. & Forsberg, G. 2017, Resmönster, resvanor och reseupplevelser bland ungdomar i Stockholm län. I: Wimark, T. (red) *Metoder och verktyg för sociala nyttoberäkningar i kollektivtrafiken.* Kulturgeografiskt seminarium 2017:1. Kulturgeografiska institutionen. Stockholm: Stockholms universitet., 87-113.

Forsberg, G. & Stenbacka, S., 2016, New Ruralities: The influence of International Migration on Swedish Rural Areas. In:Kobayashi, K; Westlund, H.; Matshushima, H. & Ohno. S. (eds) *Social Capital and Development Trends in Rural Areas. Vol II.* Marginal Areas Research Group. Kyoto University, 35-46.

Forsberg, G & Lindgren, G, 2015, Regional Policy, Social Networks and Informal Structures. *European Urban and Regional Studies* (vol 22(4) 368-382)

Forsberg, G & Stenbacka, S. 2013, Mapping Gendered Ruralities, *European Countryside*, DOI: 10.24.2478/euco-2013-0001.

Forsberg, G & Stenbacka S 2013, Rumsliga genusanalyser med aktören i fokus, I Förte, A; Kranvik, B; Gunnerud Berg, N & Dale, B. (eds) *Å Finne sted. Metodologiske perspektiver i stedsanalyser*, Trondheim: Akademika forlag, 123-142.

Forsberg, G; Hedberg, C. & Najib, A, 2012, When the World Goes Rural : Transnational Potentials of International Migration in Rural Swedish Labour Markets, In: Hedberg, C.;

Carmo, R. M. D. (eds) *Translocal Ruralism : Mobility and Connectivity in European Rural Spaces*, Springer, 125-142.

Forsberg, G; Lindgren, G & Pettersson, K, 2012, Economic Geography in Regional Planning – Homosocial Stories or Allowing Spaces? I: Andersson, S; Berglund, K; Gunnarsson, E & Sundin E (eds) *Promoting Innovation. Policies, Practices and Procedures.* Vinnova Report VR 2012:08. Stockholm: Vinnova.

Forsberg, G; Gunnarsson, E & Borgström, M, 2012, The Quist question revisited I: Bergman, A & Huzell, H 2012. *Segregationens seghet och dess föränderliga former,* 2012:25. Karlstad: Karlstad University Press.

Forsberg, G., 2012, Interaktion och intervention - Akademins möjligheter och begränsningar för jämställdhet och regional utveckling. *Arbetsmarknad & Arbetsliv* vol 18:2, 59-72

Forsberg, G., 2011, Å velge bosted i Lofoten: En diskursanalyse av folkelige fortellinger om bostedsvalg og hverdagsliv. *Norsk Geografisk Tidsskrift,* vovl 65:2. 118-120

Forsberg, G., 2010, Nyurbanism i Sverige? Behovet av geografisk kontextualisering. *Geografiska Notiser*, nr 2, s 79-85.

Forsberg, G., 2010, Gender, Geography and Spatial Practice In: Hermelin, Brita & Jansson, Ulf (eds) Placing Geography, Sweden Through Time and Space. *Ymer,* Svenska Sällskapet för Antropologi och Geografi. S 209-222.

Forsberg, G., 2010, En motsträvig kulturgeografs karriärväg, I: Niskanen, Kirsti & Florin, Christina (red) *Föregångarna. Kvinnliga professorer om liv, makt och vetenskap.* Stockholm, SNS förlag, s 85-112.

Forsberg, G & Berger S 2009, Globalised Economy in Värmland, *Journal of Nordregio*, nr 3, s 22-23.

Forsberg, G. 2008, EUs strukturpolitik - en genusögd betraktelse. I: *Ska hela Sverige leva?* Stockholm, Formas, s 369-380.

Forsberg, G., 2008, På gränsen till genusbrott. I: Berger, S. (red.) *Regional utveckling – om produktion, livskvalitet och inflytande.* Karlstad: Karlstad University Press.

Forsberg, G., Jakobsen, Liselotte; Jansdotter, Maria, 2007, Lokalt formade livsformer, handlingspraktiker och världsbilder. I: Berger, S. Forsberg, G & Ørbeck, M. (red) (2007) *Inre Skandinavien – en gränsregion under omvandling.* Karlstad: Karlstad University Press

Forsberg, G, 2006, "....så och på jorden" – materiella tolkningar av rurala genus-konstruktioner. I: Buick, K. et.al. (red) *Rumlig praksis.* Roskilde Universitetsforlag, Roskilde.

Forsberg, G, 2006, Genusanalys – en utmaning för framsynt stostdsplanering. I: Gunnarsson, E; Neergaard, A. & Nilsson, A. (red). *Kors och tvärs: Intersektionalitet och makt i storstadens arbetsliv*. Normal Förlag, Stockholm.

Forsberg, G, 2005, Den genderiserade staden, I: Friberg, T. et.al. (red) *Speglingar av rum. Om könskodade platser och sammanhang.* Brutus Östlings Bokförlag Symposion, Stockholm/Stehag.

Forsberg, Gunnel, 2005, Structural funds and Gender Mainstreaming: counting heads or Changing Structures? In: Schmied; Doris: *Winning and Loosing. The Geography of Europe's Rural Areas. Perspectives on Rural Policy and Planning,* Aldershot: Ashgate Publishing, s 203-215

Forsberg, Gunnel & Grenholm, Cristina, 'Tolkning och reflektion. Att rita kartor över nedärvda könsrelationer'. I: Forsberg, Gunnel & Grenholm, Cristina, (red) "... *och likväl rör det sig." Genusrelationer i förändring.* Karlstad: Karlstad University Press. s.11-23.

Forsberg, Gunnel & Grenholm, Cristina, 'Att sätta genusrelationer i rörelse". I: Forsberg, Gunnel & Grenholm, Cristina, (red) "... *och likväl rör det sig." Genusrelationer i förändring.* Karlstad: Karlstad University Press. s. 221-228.

Forsberg, Gunnel, 'Horisontella mål blir moln vid horisonten. Om jämställdhetsintegrering i regionalpolitiken. I: Forsberg, Gunnel & Grenholm, Cristina, (red) "... *och likväl rör det sig." Genusrelationer i förändring.* Karlstad: Karlstad University Press. s. 171-187.

Forsberg, G., 2005, "Rumsliga obalanser i befolkningens sammansättning och bosättning," I: Forsberg, G., (red) 2005, *Planeringens utmaningar och tillämpningar.* Uppsala Publishing House, Uppsala, s. 22-33.

Forsberg, G., 2005, "Landsbygder i omvandling" I: Forsberg, G., (red) 2005, *Planeringens utmaningar och tillämpningar.* Uppsala Publishing House, Uppsala, s. 203-214.

Forsberg, G, 2005, "Den regionala utvecklingspolitiken efter 1995". I: Forsberg, G., (red) 2005, *Planeringens utmaningar och tillämpningar.* Uppsala Publishing House, Uppsala. s. 284-302.

Forsberg, G., 2005, "Visionen om en jämställd planering – och försöken att förverkliga den." I: Forsberg, G., (red) 2005, *Planeringens utmaningar och tillämpningar.* Uppsala Publishing House, Uppsala, s. 203-214.

Forsberg, G, 2005, Horisontella mål blir moln vid horisonten: Om jämställdhetsintegrering i regionalpolitiken, I: Forsberg, G & Grenholm (red) 2005, ... *och likväl rör det sig. Genusrelationer i förändring.* Karlstad University Press.

Forsberg, G, 2005, Den genderiserade staden I: Friberg, Tora, Listerborn, Carina, Andersson, Birgitta & Scholten, Christina (red) *Speglingar av rum. Om könskodade platser och sammanhang.* Stehag: Brutus Östlunds Förlag/Symposion.

Forsberg, G., 2004, Gender Mainstream and Regional Development, *Journal of Nordregio,* Nr 2 vol 4, s14-15.

Forsberg, G. & Gunnerud Berg, N. 2003, 'Rural geography and feminist geography - discourses on rurality and gender in Britain and Scandinavia' I: Simonsen, K. & Öhman, J. (red) *Voices from the North.* Aldershot: Ashgate Publishing Ltd

Forsberg, G., 2003, *Genusforskning inom kulturgeografi – en rumslig utmaning.* Stockholm: Högskoleverket, Göteborg: Nationella sekretariatet för genusforskning.

Forsberg, G., 2002, 'En feministisk exkursion i ett vetenskapligt landskap' I: Schough, K. (red) *Svensk kulturgeografi och feminism – rötter och rörelser i en rumslig disciplin.* Karlstad University Studies 2002:3, s 41- 52.

Forsberg, G., 2002, "Guide till kulturgeografisk förståelse av kön och genus" I: Forsberg, G., Grenholm, C & Jakobsen, L. (red) *Rum – upplevelsevärd – samhälle. Rapport från forskarkursen "I genderiserade rum".* Karlstad University Studies, 2002:20: 13-22.

Forsberg, G. & Grenholm, C., 2000, *Ängla-gård(ar) i feministisk analys* I: Forsberg, G., Grenholm, C & Jakobsen, L. (red) *Rum – upplevelsevärd – samhälle. Rapport från forskarkursen "I genderiserade rum".* Karlstad University Studies, 2002:20: 97-111.

Forsberg, G., 2001, Kartan som redskap i genusforskningen – exemplet föräldraförsäkring och lokala traditioner I: *Plats, Landskap, Karta – en vänatlas till Ulf Sporrong,* Kulturgeografiska institutionen, Stockholms universitet.

Forsberg, G., 2001, Rural and gender studies: A conceptual comparison, *Norsk Geografisk Tidskrift* (Norwegian Journal of Geography) Special issue. Jones, Michael (ed) Contemporary debates in the discipline of Geography Space and place, Landscape and environment. Vol 55, No 3, 2001, 152-160

Forsberg, G., 2001, The difference that space makes. A way to describe the construction of regional gender contracts. *Norsk Geografisk Tidskrift* (Norwegian Journal of Geography) Special issue. Jones, Michael (ed) Contemporary debates in the discipline of Geography Space and place, Landscape and environment. Vol 55, No 3, 2001, 161-165.

Forsberg, G., Amcoff, J. & Stenbacka, S., 2001, Dynamisk landsbygd kräver ny planering. *Miljöforskning*, Nr 1-01. Sid 47-49.

Forsberg, G., 2000, Samhällets genusansikte. I: Berger, S. (red) *Det nya samhällets geografi.* Uppsala Publishing House.

Forsberg, G. & Grenholm, C., 2000, *Ängla-gård(ar) i feministisk analys* Paper till 20:e Nordiska symposiet för kritisk samhällsgeografi, Hammarö, Karlstad 2000-09-28 - 2000-10-01. 'Rum & förkropppsligade geografiska kunskaper'.

Forsberg, G, 2000, Förkroppsligade drömmar I: *På resande fot. 23 forskare skriver om turism och upplevelser.* ETOUR, Stockholm: Sellin & Partner Bok och idé AB.

Forsberg, G, Gonäs, L & Perrons, D., 2000, Paid work: participation, inclusion and liberation. I: Duncan, S. & Pfau-Effinger, B. *Gender, Economy and Culture in the European Union.* London: Routledge. Sid 27-48.

Forsberg, G., 2000, "Hennes engagemang var hennes storhet" I: Aldskogius, H (red) *Gerd Enequist. Professor i kulturgeografi 1949-1968.* Kulturgeografiska institutionen Rapport nr 110. Uppsala universitet

Forsberg, G., 1998, Regional variations in the gender contract: gendered relations in labour markets, local politics and everyday life in Swedish regions. *Innovation, No 11:2, p 191-209*

Forsberg, G., 1998, The differentiation of the countrysides, I Andersson, L., & Blom, T (eds) *Sustainability and Development. On the future of Small Society in a Dynamic Economy.* Regional Science Research Unit. University of Karlstad.

Forsberg, G., 1998, Framtidens arbetsmarknad och kvinnorna - vilka lärdomar kan vi dra av tidigare strukturomvandlingar? I: Furåker, B. & Blomsterberg M. (red*): Kan arbetslinjen överleva på morgondagens arbetsmarknad?* Rapport från en forskningskonferens i Göteborg 25-26 september 1997. Rådet för arbetslivsforskning, Stockholm.

Forsberg, G, 1997, Jordbruk som tjänsteproduktion - en ekologisk välfärdssektor, *Kvinnovetenskaplig Tidskrift*, nr 1, sid 30 - 38

Forsberg, G, 1997, Är landsbygden en kvinnofälla? Sid 17-40, *Working Paper* No. 5a, Institutet för regionalforskning, Östersund.

Forsberg, G, 1997, Rulltrapperegioner och social infrastruktur. I: Sundin, E. (red) *Om makt och kön - i spåren av offentliga organisationers omvandling.* Rapport till Utredningen om fördelning av ekonomisk makt och ekonomiska resurser mellan kvinnor och män, Stockholm, SOU 1997:83. Sid 31-68.

Forsberg, G, 1997, Att förstå den nya landsbygdens mosaik.I: Westlund, H., (red) *Lokal utveckling för regional omvandling.* Institutet för regionalforskning. Rapport 100, 1997.

Forsberg, G., 1997, Reproduktionen av den patriarkala bruksandan. I: Bergdahl, E., Isacson, M. & Mellander, B., *Bruksandan - hinder eller möjlighet?* Ekomuseum Bergslagen, 1997.

Forsberg, G., 1996, Rum med utsikter- modulationer på ett grundtema, *Kvinnovetenskaplig Tidskrift*, nr 2, sid 15-23

Forsberg, G., 1996, Landsbygdens nykolonisation, I: Månsson, H., *Periferin i Centrum*, Glesbygdsverket. Sid 31 – 46

Forsberg, G., 1996, Kvinnospår i Geografin, *Nordisk Samhällsgeografisk Tidskrift* nr 21, sid 2-21.

Berger, S. & Forsberg, G., 1995, Välfärd - en social infrastruktur. I: *Ditt Värmland. Om välfärd och levnadsförhållanden.* Länsstyrelsen i Värmlands län.

Forsberg, G., 1995, Kvinnor och regional rättvisa. *Nordisk Samhällsgeografisk Tidskrift,* nr 20, sid 88-100.

Forsberg, G., 1994, Occupational sex segregation in a 'women-friendly' society - the case of Sweden. *Environment and Planning A , vol 26, pp 1235-1256.*

Forsberg, G., 1992, Kvinnor och män i arbetslivet, I: Acker m . *Kvinnors och mäns liv och arbete*. SNS Förlag, Stockholm.

Forsberg . G., 1991, *Kvinnors framtida arbetsliv.* I: Produktion och familj - vägval inför 2000-talet. FRN-Framtidsstudier, Stockolm.

Forsberg, G., 1991, Samhällsgeografi och könsstrukturella analyser, I: Berger, S. (red), *Samhällets geografi*, Nordisk Samhällgeografisk Tidskrift, Uppsala.

Forsberg, G., 1990, On feminism and geography in Sweden. *Nordisk Samhällsgeografisk Tidskrift* nr 1-2.

Conference papers (selection of)

Forsberg, G 2017, *Barriers and opportunities in Academy. A reflection from the distaff side.* Paper presented in session Women in geography: is there a glass ceiling? at the 7th Nordic Geographers Meeting, Stockholm June 18-26, 2017

Forsberg, G. 2016, *Which Crises?* Paper presented at the conference Nordic Ruralities: Crisis and Recilience, May 22-24. University of Akureyri, Island

Forsberg, G., 2016, *Research on Migration.* Paper presented at workshop Essential scientific challenges for the humanities and social sciences: The case of migration flow and other issues May 15-18. UNICAMP, Campinas, Sao Paolo, Brazil.

Forsberg, G,; Webster, N., 2015, *Food for Integration – tied to locality,* Paper presented at the Nordic Geographers Meeting, *Geographical Imagination: Interpretations of Nature, Art and Politics* Tallinn, Estonia.

Forsberg, G; Stenbacka, S, 2015, *New ruralities: The influence on Swedish rural areas by international migration.* Paper presented at The 12th Workshop on Social Capital and Development Trends in the Japanese and Swedish Countryside, Hida Earth Wisdom Center, Takayama, JAPAN.

Forsberg, G; Webster, N, 2014 *Translocal practices and culinary reformation.* Paper presented at the Nordic Conference for Rural Research, Trondheim, Norway.

Forsberg, G; Stenbacka, S, 2014 *"Going gender": Mobility Practices in a Transnational World.* Paper presented at the Session Gender and Geography: Bodies, Borders and Mobilites. IGU Conference, Krakow.

Forsberg, G; Stenbacka, S, 2014 *"Going gender": mobility practices in a transnational world.* Paper presented at the Fourth International Workshop on Rural Change – Mobilities and Flexibilities, Trondheim, Norway.

Forsberg, G; Stenbacka, S, 2013, *Going gender and making space – about mobile but "placed" gender identities.* Paper presented at the NGM Conference Responsible Geographies, Reykjavik, Iceland.

Forsberg, G. 2012 *Transnationalism på den svenska landsbygden.* Paper presented at Regionforskarkonferens Karlstad.

Forsberg, G; Stenbacka, S; Lundmark, M., 2012, *Landsbygden, vems problem? Föreställningar om landsbygden - mer myter än faktiska fakta.* Paper presenterad at the second Nordic Ruralities Conference, Juensuu, Finland.

Forsberg, G.; Gunnarsson, E.; Borgström, M., 2013 *Kvinnor i strukturomvandligen (The Qvist-project) 1986 - ?.* Paper presenterad vid FALK-konferens: Makt, Myter och Motstridigheter – Utmaningar i dagens arbetsliv. Karlstad, Sweden.

Forsberg, G; Stenbacka, S, 2011, *A Geographical Twist of Doing Gender-theory.* Paper presented at the Nordic Geographers Meeting: Geographical Knowledge, Nature and Practice. Roskilde

Forsberg, G, 2010, *Regional policy and homosocial structures,* paper presented at VIII Triple Helix conference, Madrid, Spain.

Forsberg, G., *Vart är vi på väg? Om regional tillväxtpolitik.* Paper presenterad vid Nationell jämställdhetskonferens för Universitet och Högskolor. Karlstad, Sweden.

Forsberg, G., 2010, *Regional policy and homosocial structures.* Paper presented at ERSA conference Sustainable regional growth and development in the creative economy, Jönköping, Sweden.

Forsberg, G; Stenbacka, S, 2009, *When the World goes Rural – Are International Migration Flows changing the Swedish Countryside?* Paper presented at the Association of American Geographers Conference, *LAS VEGAS, USA.*

Forsberg, G., 2008, *The construction of gendered spaces.* Keynote address at the Nordic Conference on Gender, Intersectionality and Regional Development, Umeå, Sweden.

Forsberg, G & Jakobsen, L. 2008, *Aspects of contemporary understanding of non-heteronormativity in spatial and labour analysis.* Paper presenterad at "Changing Gender Relations: Nordic Feminism and Gender Research October 6, 2008" Karlstad University.

Forsberg, G, Stenbacka, S. & Råbock, I. 2008, *Mapping Gendered Ruralities.* Paper presented at "Changing Gender Relations: Nordic Feminism and Gender Research October 6, 2008" Karlstad University.

Forsberg, G. & Berger, S., 2007 *Globalised Economy at the Frontier,* Paper presented at the Regional Studies International Conference: Regions in Focus? Lisbon 2th-5th April 2007,

Forsberg, G. & Stenbacka., S., 2007, *Gendered discourses of rural space and practices,* Conference by Association of American Geographers, San Francisco,

Forsberg, G. & Stenbacka., S., 2007, *New Gendered Ruralities –: Contested place-specific gender contracts in Sweden,* Nordisk geografkonferens i Bergen, 14-17 juni 2007.

Forsberg, G, 2005, *The gendering of urban space,* Paper to The Inaugural Nordic Geographers Meeting, session: Gendered Spaces I: Public Spaces – to live and work in, May 10 – 14, Lund

Forsberg, G. 2003, *'Samhällsplaneringens genusdiskurser'* Paper presenterat vid konferensen "Kontexter som utmanar" Karlstad universitet, Institutionen för samhällsvetenskap, Avd. för genusvetenskap.

Berger, S. & Forsberg, G., 2001, *Evaluating the Structural Funds of the European Union* Paper presented at the International Conference "Evaluation, Good Governance and Development" in Colombo, Sri Lanka, 22 nd-24th June 2001, organized by SLEvA, The Sri Lanka Evaluation Association.

Forsberg, G & Berger, S., 1993, *Infrastruktur ett begrepp med många bottnar.* Kulturgeografiska institutionens minisymposium, Älvkarleö 1993-12-16--17.

Articles in Popular Scientific Magazines

Forsberg, G., 2014, Jämställdhet och jämlikhet, Tidskriften *PLAN* nr 4, 18-25.

Forsberg, G, Lundmark, M & Stenbacka, S 2012, *Demografiska myter. Föreställningar om landsbygden – mer myter än faktiska fakta.* Stockholm: Öhrlings PricewaterhouseCoopers AB.

Forsberg, G., 2011, Uthålligt vardagsliv. I: *Urbaniserad värld. Nya steg mot hållbara städer.* Antologi från Global Utmaning.

Forsberg, G., 2008, Hjälper miljonerna till kvinnors företagande? *Genusperspektiv,* nr 2, s 7.

Forsberg, G., 2007, Längtan efter den dag då klyvningsdiskursen är upphävd, *Genus,* nr 3, s. 36.

Forsberg, G. & Gunnerud Berg, N., 2005 Hverdagslivets infrastruktur – svensk och norsk utforming. (norska) *Plan* nr 3-4/2005, s 12-14.

Berger, S. & Forsberg, G., 2005, "Gränsen – resurs eller barriär?", (svenska) PLAN, Nr 2, s 16-19.

Forsberg, G. 2004, Genusperspektiv på turism och resande, *Nättidningen Alba,* nr 3

Forsberg, G. 2003, Vill du rösta bort dina arbetskamrater? *Arbetarskydd*, nr 7

Forsberg, G. 2003, Bögskämt på jobbet – är det något att bråka om? *Arbetarskydd* nr 14,

Forsberg, Gunnel & Hermelin, Brita: en gränslös platsplanering – en utmaning för samhällsplanerarutbildningen vid Stockholms universitet. Tidskriften *PLAN,* nr 3: 44-45

Forsberg, G. 2002, "Förena staden och landsbygden. *Framtider.* 2/2002. Tema: Stad och land – konkurrens som framtidsvision. 6-11.

Forsberg, G. 2002, Tjejen från callcentret blir aldrig staty. *Arbetarskydd,* nr 8, sid 17.

Forsberg, G, 2001, "Det geografiskt upplösta rummet", *Arbetarskydd*, nr 8,

Forsberg, G, 2000, "Nya spjutspetsar i hela landet", *Arbetarskydd*, nr 3,

Forsberg, G, 2000, "Fler kvinnor på jobbet", *Arbetarskydd*, nr 14,

Forsberg, G., 1999, Se upp för Gnosjöandan, tjejer! *Arbetarskydd,* nr 6/7, sid 27

Forsberg, G., 1999, Jämställdheten och tillväxten, *Jämsmed, Om kvinnor och män i Jämtlands län,* Länsstyrelsen i Jämtlands län, Nr 2, sid 24.

Forsberg, G, 1998, "Vi älskar att tycka synd om landsbygden" *Arbetarskydd*, nr 5,

Forsberg, G, 1997, "Dimridåer om akademiska tjänster" *Arbetarskydd*, nr 10,

Forsberg, G, 1997, "Lös förankning - utväg eller tvångströja?" *Arbetarskydd*, nr 15,

Forsberg, G., 1996, Att vädra lantluft. *Byggforskning* , nr 5 sid 14 – 16

Reviews

Forsberg, G., Solstad, KJ, 2014, Pedagogisk entreprenørskap som virkemiddel for lokal og regional utvikling : eksempler fra skoler og mindre kystsamfunn i Finnmark, Norsk Geografisk Tidsskrift, nr 3, 201-203. (recension)

Forsberg, G, Lysgård, HK & Daugstad, K, 2011, Å velge bosted i Lofoten: En diskursanalyse av folkelige fortellinger om bostedsvalg og hverdagsliv. *Norwegian Journal of Geography* vol 65:2. 118-120 (recension)

Forsberg, G, Fosso, E.j. & Jones M 2010, Bygdas unge menn. En studie av bygdemenns forhandlinger om og utformning av "rurale maskuliniteter" *Norwegian Journal of Geography* vol 64:2. 125-126 (recension)

Recension av Antonsen, Karin Marie: "Å velge bosted i Lofoten: En diskursanalyse av folkelige fortellinger om bostedsvalg og hverdagsliv". 2011. Avhandling. *Norsk Geografisk Tidskrift*, vol 65, No 2, 118-120.

Recension av Staden, Husen, Tiden (2002) , *Tidskriften PLAN nr* 4: 46-47

Vems är staden? Recension av Lindholm, M & Nilsson, A (2002) En annan stad. *Tidskriften PLAN* nr 5-6: 62-63

Recension av Greed, Clara H. (1994) Women and Planning–Creating Gendered Realities, *Geografiska Annaler* Series B, Human Geography, Vol 79 B, No 4.

Recension av David M. Smith (1994) Geography and Social Justice, *Nordrevy* nr 2, sid 30-31.

Other Publications

Framflyttade positioner eller spel för galleriet – jämställdheten i strukturfondsarbetet, 2010 I: Hur jobbar vi med jämställdhet, integration, hållbar utveckling och innovation? Lärande utvärdering i regionalfondsprojekt. Stockholm: Tillväxtverket.

Strategier för jämställdhet – lokala genuskontrakt i Uppsala län, 2007, Uppsala: Resurs Uppland

Resurscentra för kvinnor - en kraft för hållbar regional utveckling? 2004, Stockholm: Nutek

Mål 5b Skärgården. Slututvärdering, 2001, IM-gruppen i Uppsala AB. Rapport 2001:3. Östersund: Glesbygdsverket

Mål 5b Västra Sverige. Slututvärdering, 2001, IM-gruppen i Uppsala AB. Rapport 2001:2.b Östersund: Glesbygdsverket

Sundgren Grinups, B. & Forsberg, G. 2001, *Jämställdhet,* http://www.ne.se/jsp/search/article.jsp?i_art_id=488430 Nationalencyklopedin 2001-08-10

Forsberg, G., 1999, *Könskvotering i regionalpolitiken – förslag till framtida åtgärder.* IM-Gruppen i Uppsala, Rapport 1999:1

Forsberg, G. & van der Burgt, D. 1999, Genusperspektiv på forskningen inom kultursektorn. I: *Sektorsforskningen inom kulturområdet. Delrapport nr 3: fördjupningsstudier och kompletteringar*. Humanistisk-Samhällsvetenskapliga Forskningsrådet. 99-05-17.

Halvtidsutvärdering för Mål 5bprogrammet i Västerbotten/Gävle/Dala. IM-Gruppen i Uppsala AB, Uppsala 1997.

Forsberg, G., 1991, *Ett livsviktigt projekt.*! Framtid i Sörmland, LO-sektionen i Sörmland och A-forum Uppsala universitet, Eskilstuna.

Checka Listan!, 1990, Referensgruppen för jämställhet i kommunal planering, Uppsala kommun.

Forsberg, G. & Berger, S., 1989, *Om kvinnors förvärvshinder, frånvaro och närvaro*. IM-Gruppen, Uppsala.

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Københavns Universitet

Profil:
Lars har været professor I kulturgeografi på Institut for Geovidenskab og Naturforvaltning på Københavns Universitet siden 2015. Lars har i mange år forsket i store byer og regional udvikling. Lars er leder af forskningsgruppen Transformation of cities and landscapes – geoinformatics, som primært beskæftiger sig med analyse af urbanisering og erhvervsmæssige forandringer i bynære områder. Lars har en kandidatgrad i kulturgeografi og en ph.d. i økononisk geografi, begge fra Københavns Universitet.

Publikationsliste (internationale peer-review artikler/bogkapitler 2010-2017)

- **Employment growth and regional development : industrial change and contextual differences between Denmark and Sweden.** / Eriksson, Rikard; Hansen, Høgni Kalsø; Winther, Lars. I: European Planning Studies, Vol. 25, Nr. 10, 2017, s. 1756-1778.
- **Employment growth, human capital and educational levels : uneven urban and regional development in Denmark 2002–2012.** / Hansen, Høgni Kalsø; Winther, Lars. I: Danish Journal of Geography, Vol. 115, Nr. 2, 2015, s. 105-118.
- **Manufacturing in the knowledge economy : innovation in low-tech industries.** / Hansen, Teis; Winther, Lars. Handbook of Manufacturing Industries in the World Economy. red. / John Bryson; Jennifer Clark; Vida Vanchan. Edward Elgar Publishing, Incorporated, 2015. s. 439-450 (Research Handbooks in Business and Management).
- **Knowledge Production, Urban Locations and the Importance of Local Networks.** / Skytt-Larsen, Christine Benna; Winther, Lars. I: European Planning Studies, Vol. 23, Nr. 9, 2015, s. 1895-1917.
- **Editorial – transformation of cities.** / Winther, Lars. I: Geografisk tidsskrift / Danish journal of geography, Vol. 115, Nr. 2, 03.07.2015, s. 67-72.
- **Regional development and the impact of the public sector in Denmark : employment growth and human capital.** / Hansen, Høgni Kalsø; Winther, Lars. I: Geografisk Tidsskrift/Danisk Journal of Geography, Vol. 114, Nr. 2, 2014, s. 156-168.
- **Competitive low-tech manufacturing and challenges for regional policy in the European context : lessons from the Danish experience.** / Hansen, Teis; Winther, Lars. I: Cambridge Journal of Regions, Economy and Society, Vol. 7, Nr. 3, 2014, s. 449-470.
- **Human capital in low-tech manufacturing : The geography of the knowledge economy in Denmark.** / Hansen, Teis; Winther, Lars; Hansen, Ronnie Fibæk. I: European Planning Studies, Vol. 22, Nr. 8, 2014, s. 1693-1710.
- **Emerging talents? International students before and after their career start in Denmark.** / Mosneaga, Ana; Winther, Lars. I: Population Space and Place, Vol. 19, Nr. 2, 2013, s. 181-195.
- **On the road to nowhere: a comment on amenities and urban regional development.** / Hansen, Høgni Kalsø; Winther, Lars. Cultural Political Economy of Small Cities. red. / Anne Lorentzen; Bas van Heur. London : Routledge, 2012. s. 31-43 (Regions and Cities).
- **The urban turn : cities, talent and knowledge in Denmark.** / Hansen, Høgni Kalsø; Winther, Lars. Aarhus Universitetsforlag, 2012. 148 s.
- **Book review : "Key concepts in economic geography"; Yuko Aoyama, James T. Murphy and Susan Hanson.** / Winther, Lars. I: Regional Studies, Vol. 46, Nr. 1, 2012, s. 150-151.
- **Innovation, regional development and relations between high- and low-tech industries.** / Hansen, Teis; Winther, Lars. I: European Urban and Regional Studies, Vol. 18, Nr. 3, 2011, s. 321-339.
- **Trust and local knowledge production: Interorganisational collaborations in the Sønderborg region, Denmark.** / Skytt, Christine Benna; Winther, Lars. I: Geografisk Tidsskrift, Vol. 111, Nr. 1, 2011, s. 27-41.
- **Crisis in the Resurgent City? The Rise of Copenhagen.** / Andersen, Hans Thor; Winther, Lars. I: International Journal of Urban and Regional Research, Vol. 34, Nr. 3, 2010, s. 693-700.
- **The spatial division of talent in city regions : location dynamics of business services in Copenhagen.** / Kalso Hansen, Høgni; Winther, Lars. I: Tijdschrift voor Economische en Sociale Geografie, Vol. 101, Nr. 1, 2010, s. 55-72.

Fortegnelse over bedømmelsesudvalg til
stilling 201737 Assistant Professor in Geoinformatics (201737) ved PLAN

Navn: Associate Professor Carsten Kessler
Arbejdssted: AAU, PLAN

Navn: Assiate Professor Martin Rudbeck Jepsen
Arbejdssted: KU

Navn: professor Hardy Pundt
Arbejdssted: Harz University of Applied Sciences

Akademisk Råd har taget stilling til, at medlemmer af bedømmelsesudvalget er sagkyndige inden for stillingsområdet på et niveau, der mindst svarer til det, der forudsættes for stillingen, dog ikke under lektorniveau.

Assistant Professor in Geoinformatics (201737)

Position No.
201737

At the Technical Faculty of IT and Design, Department of Planning, Copenhagen campus, a position as Assistant Professor in Geoinformatics is open for appointment from 1 February 2018 or soon hereafter.

The initial appointment for this position will be for 3 years, with possibility of extension.

The field of the Department for Planning includes development and planning in a broad sense, and thereby it ranges from the social science aspects of development like environmental management, physical planning, sector planning, land management, to technical subjects such as surveying and geoinformatics. See more at www.plan.aau.dk.

Job description

The position is allocated to the Geoinformatics research group, which covers a broad range of topics including spatial data infrastructure, geospatial analysis and modelling, earth observation, and geospatial enabled technologies broadly. The research is often associated with other topics at the Department of Planning such as climate change, migration, and spatial planning.

This specific position will be placed in an internally funded interdisciplinary 3-year project on Global flows of refugees and their impact on North European welfare states. The project is conducted in collaboration with the Department of Political Science, Department of Culture and Global Studies, and the Department of Learning and Philosophy. You may obtain further professional information from Head of Section, Professor Henning Sten Hansen, e-mail: hsh@plan.aau.dk / phone: +45 2815 6464 or Associate professor Carsten Kessler, e-mail: kessler@plan.aau.dk / phone.: +45 2090 7226.

Qualification requirements for the position:

The appointment presupposes that the applicant can demonstrate original scientific production at an international level. The successful candidate will develop demographic and migration simulation models in collaboration with rest of the Geoinformatics group. Applicants should therefore have strong programming skills and ideally have experience in large-scale geosimulation, processing of geospatial big data, or related topics. Knowledge about climate change will be considered an advantage.

Appointment as an Assistant Professor presupposes scientific qualifications at PhD-level or similar scientific qualifications. The research potential of each applicant will be emphasized in the overall assessment.

Appointment as an Assistant Professor cannot exceed a period of four years in total in a temporary position (appointment at Assistant Professor level cannot exceed a period of eight years in total in Denmark).

Information regarding guidelines, ministerial circular in force, teaching portfolio and procedures can be seen here.

The application must contain the following:

- A statement outlining your reasons for applying, and intentions and visions with, the position.
- Your curriculum vitae, including personal data, educational background, scientific qualifications, dissemination skills, participation in committees and boards, and additional qualifications relevant for the position.
- Copies of relevant diplomas (Master of Science and PhD). On request, you could be asked for an official English translation.
- A complete list of publications.
- Publications you wish to be considered by the assessment committee. You may attach up to 5 publications when applying for an associate professor position.
- References/recommendations

An assessment committee will assess all candidates.

The applications are only to be submitted online by using the "Apply onlin" button below.

Workplace
Copenhagen

Agreement
Employment is in accordance with the Ministerial Order on the Appointment of Academic Staff at Universities (the Appointment Order) and the Ministry of Finance's current Job Structure for Academic Staff at Universities. Employment and salary are in accordance with the collective agreement for state-employed academics.

Deadline
05/12/2017

Apply online

Aalborg University (AAU) conducts teaching and research to the highest level in the fields of humanities, engineering, and natural, health, and social sciences.

top

Prof. Dr. Hardy Pundt

Curriculum vitae

1964	born in Hage/Ostfriesland, Germany
1970 - 1974	Primary School of Juist and Norden
1974 - 1977	Secondary school Johannes-Althusius Gymnasium, Emden
1977 - 1983	Secondary school Ulrichsgymnasium, Norden (May 1983: university entrance diploma)
1983	Six months military service at the "10th Airforce Regiment 2" in Budel Leegerplaats (The Netherlands) and at the "23. Flugabwehrraketen-Bataillon", Wiesmoor (Germany)
1983 - 1984	Ten months civil service in an institution to support handicapped people in Norden
1984 - 1990	Studies in geography, geology, botany, and ethnology at the University of Muenster
1990	Master of Science (Geography, focus on Computer-based hydrological modelling and GIS)
1987 - 1988	Students worker in the team for computer-cartography at the Historic Seminar of the University of Münster
1988 - 1990	Students worker in the „GIS-Group", Institute for Geography
1990 - 1993	Scientific employee at the Institute for Geography, University of Münster
1992	Additional business as teacher for programming at Siemens/Nixdorf
1993 - 1995	Project leader in the research project „LIFE" (Limnological Expert System), Institute for Geoinformatics, University of Münster
1995 - 1997	Project leader in the EU-project „CADCOS" (Computer-Aided Data Collection System) at the Chamber for Agriculture Westfalen-Lippe
1994 - 1996	Free lancer of the con terra – applied spatial information technologies, Münster
1994	Scientific consultant at the West Galloway Fisheries Trust Ltd., Newton Stewart, Scotland (6 months)
1995	Defence of the PhD thesis, at the Faculty for Mathematics and Natural Sciences, University of Münster

1996 - 2002	Scientific assistant at the Institute for Geoinformatics Münster (under Prof. Dr. W. Kuhn)
1994 - 2002	Member of the leading committee of the Institute for Geoinformatics
1997	Researcher/teacher at the Centro de Ecologia der Univ. Federal do Rio Grande do Sul in Porto Alegre, Brasilien (DAAD, 1 month)
2001	Researcher at the University of Utah (USA), Salt Lake City (1 month)
since 04/2002	Professor for Geoinformatics at Harz University of Applied Sciences in Wernigerode, Germany
since 2002	Member in several programme committees and reviewer for different scientifc journals in the field of Geoinformatics and Environmental Modelling
2003	Habilitation, venia legendii in Geoinformatics of the University of Münster, Germany
since 2008	Member of the Council of the Dept. of Automation and Computer Science
2006 - 2015	Coordinator of the curriculum "Computer Science"
2009 - 2017	Member of the Council of the Association of Geographic Information Laboratories Europe (AGILE), 2011 - 2017 Treasurer of AGILE
06/2012	*Best Research in Progress Award* at the European, Mediterranean & Middle Eastern Conference on Information Systems, Munich, 7th – 8th of June, 2012 (together with Andrea Heilmann and Jane Brennan (UTS Sydney))
08/2012	Researcher at the University of Technology Sydney/Australia (UTS) within the framework of a common project funded by the German Academic Exchange Service (DAAD) (1 month)
2012/2013	Coordination of two AGILE PhD schools, each with around 20 selected PhD students from various European Countries, Kenia, and Japan
2014 - 2016	Election into the Senate of the University of Applied Sciences Harz
2017	*Outstanding Paper Award* at the International Conference on Information Systems, Budapest/Hungary, 2017.
since 1992	Around 100 scientific publications in English and German language

Associate Professor Martin Rudbeck Jepsen

Address: Skipper Clements Alle 1, 1., 2300 Copenhagen, Denmark. Phone:+45 51940748
mrj@geo.ku.dk Google scholar: https://scholar.google.com/citations?user=3I5UVA0AAAAJ&hl=en

EMPLOYMENT

2013 – Present	Associate Professor, University of Copenhagen
2011 - 2013	Assistant Professor, University of Copenhagen
2010 - 2011	High School teacher, Birkerød Gymnasium
2008 - 2010	Post-doctoral reseearcher, Århus University
2006 - 2008	Data modeler and analyst, Statens Serum Institut (Danish Center for Disease Control)
2005 - 2006	Academic staff, Danish Ministry of Environment

EDUCATION

2015	Supervision of doctoral students, University of Copenhagen
2015	Responsible Conduct of Research, University of Copenhagen
2010	University Didactics, Århus University
2002 - 2006	PhD, University of Copenhagen
1998 - 2001	Cand. Scient, University of Copenhagen
1995 - 1998	B.Sc., University of Copenhagen

PERIOD OF LEAVE

2011	Paternity leave, 9 weeks

SCIENTIFIC RESEARCH AREAS

My overarching research focus is on the interplay between society and ecosystems, particularly when expressed as land use changes and climate change causes, mitigation, and adaptations. I have conducted research on land use systems since my master thesis, and have focused on local decision making and local environmental impacts, especially on carbon stocks and sequestrations in biomass. In contrast to the local scale studies, I have been lead on a project tracking and analyzing drivers of land management across the entire Europe for the past 200 years.

RESEARCH GRANTS

2017 – 2018	Erhvervsstyrelsen/Landdistriktspuljen – "hvad skaber rurale sucesser?" (appr. 500.000 DKK)
2015 – 2016	EU JPI "CLIMA" - "Processing chains for EO based land-use classifications" (appr. 500.000 DKK)
2011 – 2015	EU FP7 "VOLANTE" - "Understanding long-term drivers of land-use change" (appr. 2.000.000 DKK)
2006 – 2008	EU network of Excellence "MedVetNet" – WP scientific leader on spatial analysis and public health

Supervised 5 PhD-students (2 ongoing), appr. 25 master students.

SCIENTIFIC LEADERSHIP

2015-2018	PI on task 4 "Mapping Land Use", EU JPI project "CLIMA"
2011-2015	PI on task 4.3 "Long-term drivers of land use change" in EU FP7 research project "Visions of land use change in Europe (VOLANTE))

OTHER SCIENTIFIC MERITS

2017	reviewer for the Swiss National Science Foundation
2012	reviewer for the Portuguese Foundation for Science and Technology

Reviewer for a.o. Global Environmental Change, Regional Environmental Change, Int. J. of Appl. Earth Observation and Geoinformation, Land Use Policy, Ambio, Landscape Ecology.
VIP representative in the departamental board for teaching
Editorial board member on *Remote Sensing in Earth System Science* and *geoforum.dk*

SUPERVISION

Supervised 5 PhD-students (2 ongoing), appr. 25 master students.

Fortegnelse over bedømmelsesudvalg til
stilling 201738 Assistant Professor in Energy Planning and Energy System Modelling (201738)
ved PLAN

Navn: Professor mso Poul Østergaard
Arbejdssted: PLAN, AAU
E-mail: poul@plan.aau.dk

Navn: Professor Frits Møller Andersen
Arbejdssted: DTU
E-mail: fman@dtu.dk

Navn: Professor Louise Ödlund
Arbejdssted: Linköping Universitet
E-mail: louise.odlund@liu.se

Akademisk Råd har taget stilling til, at medlemmer af bedømmelsesudvalget er sagkyndige inden for stillingsområdet på et niveau, der mindst svarer til det, der forudsættes for stillingen, dog ikke under lektorniveau.

Assistant Professor in Energy Planning and Energy System Modelling (201738)

Position No.
201738

At Technical Faculty of IT and Design, Department of Planning, Aalborg a position as Assistant Professor in Energy Planning open for appointment from 1 April 2018 or soon hereafter. The position is available for a period of 3 years.

The Department of Development and Planning conducts research and teaching on development and planning in a broad sense, including social science aspects as well as more technical aspects of development, and with a focus on environmental, international as well as administrative dimensions.

Job description
Research areas will be within energy planning with a focus on smart energy systems, feasibility studies and public regulation. Special attention is given to the development and programming of the advanced energy system analysis tool, EnergyPLAN. It is expected that the position will contribute to the further development and use of such and similar tools in the research group.

Teaching will primarily be in Sustainable Energy Planning and Management at the bachelor as well as at the master level, but also in other study programmes at the University. You may obtain further professional information from Professor Poul Alberg Østergaard, Department of Planning, e-mail: Poul@plan.aau.dk or Henrik Lund, Department of Planning, e-mail: lund@plan.aau.dk tel.: +45 9940 8309.

Qualification requirements:

Appointment as an Assistant Professor presupposes scientific qualifications at PhD-level or similar scientific qualifications. The research potential of each applicant will be emphasized in the overall assessment. Appointment as an Assistant Professor cannot exceed a period of four years in total at Aalborg University in a temporary position (appointment at Assistant Professor level cannot exceed a period of eight years in total in Denmark). The application must contain the following:

- A statement outlining your reasons for applying, and intentions and visions with, the position.
- Your curriculum vitae, including personal data, educational background, scientific qualifications, dissemination skills, participation in committees and boards, and additional qualifications relevant for the position.
- Copies of relevant diplomas (Master of Science and PhD). On request you could be asked for an official English translation.
- A complete list of publications.
- Publications you wish to be considered by the assessment committee. You may attach up to 5 publications.
- A specification of your teaching qualifications relative to the teaching portfolio. If this is not enclosed you must include an explanation for its absence.
- References/recommendations.

An assessment committee will assess all candidates. The applications are only to be submitted online by using the "Apply online" button below.

For further information concerning the application procedure please contact Nickie Hermansen by mail nkh@adm.aau.dk or phone (+45) 9940 7902

Information regarding guidelines, ministerial circular in force, teaching portfolio and procedures can be seen here.

Workplace
Aalborg

Agreement
Employment is in accordance with the Ministerial Order on the Appointment of Academic Staff at Universities (the Appointment Order) and the Ministry of Finance's

current Job Structure for Academic Staff at Universities. Employment and salary are in accordance with the collective agreement for state-employed academics.

Deadline
05/12/2017

Apply online

Aalborg University (AAU) conducts teaching and research to the highest level in the fields of humanities, engineering, and natural, health, and social sciences.

top

CURRICULUM VITAE (Short Version) 2017

Louise Ödlund (former Trygg)

Professor, Docent
Department of Management and Engineering
Linköping University (www.liu.se)

Louise Ödlund (former Trygg), Professor
Born: 7st September 1966, Citizen: Swedish

Present affiliation
- Professor in Energy Systems, Linköping University.
- Professor in Energy Technology, University of Gävle.

University education
2011 Docent in Energy Systems, Department of Mechanical Engineering, Linköping University
2006 PhD in Energy Systems, Department of Mechanical Engineering, Linköping University. "Swedish industrial and energy supply measures in a European system perspective", Supervisor Professor Björn Karlsson.
1982 MSc in Mechanical Engineering, Linköping University

Employment
2015- Guest Professor in Energy Technology, University of Gävle, Sweden
2014-2015 Professor in Energy Technology, University of Dalarna, Sweden
2013- Professor in Energy Systems, Linköping University, Sweden
2006-2013 Research Assistant, Linköping University, Sweden
2001-2006 PhD-student, Linköping University, Sweden
1997-2001 Business area manager, E.ON, Sweden
1992-1997 Research engineer, E.ON, Sweden

Short Resume

Louise Ödlund (former Trygg) is Professor in Energy System at Linköping University and Guest Professor in Energy Technology, University of Gävle. Louise completed in 1991 her M.Sc. in Mechanical Engineering at the University of Linköping. During the studies Louise was active in the student union and a member of the national board for post-secondary study assistance. Parallel to her engineering education she undertook extensive studies in mathematic.

In the years of 1991—92 Louise was employed as a teacher at the University of Linköping and at National Institute for Distance Education in Norrköping in the subject mathematics and physics. Through that period she was also involved in designing a multimedia program. During 1992-2001 Louise worked at E.ON, Norrköping. In 1997 she became Business Area Manager for new business development. She was then, among

other things, responsible for introducing district cooling in the municipality of Norrköping which included planning, designing, extension and management of the district cooling system. She was also part of the company's executive board and the MD group.

In 2001 Louise started her PhD studies at the division of Energy Systems at the University of Linköping. Her research area concerns regional and municipal energy systems with a special focus on district heating. By using optimization models she has studied how the combined energy system of energy user and energy supplier can shift in the direction of resource effectiveness and sustainability. Louise has also analyzed a great number of small- and middle sized industries in different Swedish municipalities and found measures that strongly can reduced the industries' use of energy.

Louise has several years of experience of University teaching. She has developed several university courses and co-developed the international master's program Energy and Environmental Engineering as well as the national master's program Energy, Environmental and Management. She has been Director of Studies at the division of Energy System at Linköping University for seven years and has taken extensive courses in leadership and is also a member of several boards at the University as well as within national and international authorities. Louise is part of the research school Reesbe (resource-effeicnt energy system in the built environment) interdisciplinary national research programme Energy Systems and is leading the research group for regional and municipal energy systems within the programme. She is responsible for the department's national Energy System conference that is held every second year and was also head secretary for the international conference of World Renewable Energy Conference that was held at the University of Linköping in 2011.

Louise has written several journal publications, conferences publications and reports. She has studied leadership and is supervisor for several PhD-students. Louise is involved in many research projects, both within the division as well as in co-operation with other universities. Louise is also a frequently engaged invited speaker for conferences and events.

Exampel of Publications Louise Ödlund (former Trygg)

Trygg L, Björk C, Karlsson P, Rönnelid M, Danica Djuric Ilic1 Heat collaboration for increased resource efficiency - a case study of a regional district heating system and a mine, , 5th International Symposium on District Heating and Cooling in Seoul, Korea, 2016

Nordenstam L., Bennerstam M, Trygg L, CONSIDERING INVESTMENT RESOURCES WHEN ASSESSING POTENTIAL C02 REDUCTIONS OF CHP - A CASE STUDY, 5th International Symposium on District Heating and Cooling in Seoul, Korea., 2016

Trygg L, District heating - a key element in a fully balanced renewable energy system, 2nd International Conference on Smart Energy Systems and 4th Generation District Heating 26-29 September 2016 · Aalborg

Rosén T, Trygg L, Active management of heat customers towards lower district heat return water temperature, 2nd International Conference on Smart Energy Systems and 4th Generation District Heating 26-29 September 2016 · Aalborg

Blomqvist S, Trygg L, A system perspective on altered district heating demand in multifamily buildings, 2nd International Conference on Smart Energy Systems and 4th Generation District Heating 26-29 September 2016 · Aalborg

Gustafsson G, Karlsson B, Trygg L, Rönnelid M, "CO2 emission evaluation of energy conserving measures in buildings connected to a district heating system - case study of a multi-dwelling building in Sweden", Energy 2016

Lidberg T, Olofsson T, Trygg L "System impact of energy efficient building refurbishment within a district heated region" Energy 2016

Borén S, Nurhadi L, Ny H, Karl-Henrik R, Broman G, Trygg L "A strategic approach to sustainable transport system development - Part 2: the case of a vision for electric vehicle systems in Southeast Sweden" Journal of Cleaner Production 2016

Trygg L, "Increased diffusion of renewable energy technologies – barriers and driving forces" AAG Annual Meeting, 2014

Djuric Ilic D, Dotzauer E, Trygg L, Broman G "Integration of biofuel production into district heating - part I: an evaluation of biofuel production costs using four types of biofuel production plants as case studies" Journal of Cleaner Production 2014

Djuric Ilic D, Dotzauer E, Trygg L, Broman G "Integration of biofuel production into district heating -part II: an evaluation of the district heating production costs using Stockholm as a case study" Journal of Cleaner Production 2014

Djuric Ilic D, Dotzauer E, Trygg L, Broman G "Introduction of large-scale biofuel production in a district heating system: an opportunity for reduction of global greenhouse gas emissions" Journal of Cleaner Production 2014

Djuric Ilic D, Trygg L "Economic and environmental benefits of converting industrial processes to district heating" Energy 2014

Broman G , Franca C-L, Trygg L, "Sustainable cities in a backcasting perspective", District heating association, Fjärrsyn 2013:20

Fuller R, Trygg L, "Six Million in Melbourne or a Network of Sustainable Midi-Cities? – a Thought Experiment." State of Australian Cities Conference 2013

Trygg L, " Improved energy efficiency - industrial SME and energy suppliers in a combined system" ECEE conference 2013

Thollander P, Rohdin P, Mashfegh B, Karlsson M, Söderström M, Trygg L Energy in Swedish industry 2020 – current status, policy instruments, and policy implications Journal of Cleaner Production 2013

Trygg L, Broman G, Franca C-L, "*District Heating and CHP – a Vital Role for the Development Towards a Sustainable Society?*", Urban Sustainability, Cultural Sustainability, Green Development and Clean Cars (USCUDAR 12), Spain, 2012

Djuric Ilica D, Dotzauer E, Trygg L, Broman G "Introduction of large-scale biofuel production in a district heating system – an opportunity for reduction of global greenhouse gas emissions" Journal of Cleaner Production, 2012

Franca C-L, Broman G, Robèrt K-H, Trygg L "Sustainability Self-Assessment Support: From Overall Strategy to Business Models Design Templates", Sustainable Innovation 17th International Conference, Germany, 2012

Djuric Ilica D, Dotzauer E, Trygg L, Broman G, Amiri S "Integration of a large-scale biofuel production with district heating production – an economic evaluation" Journal of Cleaner Production, under review, 2012

Thollander P, Rohdin P, Moshfegh M, Karlsson M, Söderström M, Trygg L " Energy in Swedish industry 2020 – current status, policy instruments, and policy implications", Journal of Cleaner Production, 2013

Fahlén E, Trygg L, Ahlgren E, "Assessment of absorption cooling as a district heating system strategy – A case study", Energy Conversion and Management, 2012

Djuric Ilic D, Dotzauer E, Trygg L, "District heating and ethanol production through polygeneration in Stockholm ", Applied Energy, 2012

Fahlén E, Trygg L, Ahlgren E "Potential CO2 reduction by increased integration of absorption cooling in a Swedish district energy system" 4th International Conference on Efficiency, Cost, Optimizations, Simulation and Environmental Impact of Energy 2011, Serbia, 2011

Djuric Ilic D , Trygg L, "Introduction of Absorption Cooling Process in CHP Systems – An opportunity for Reduction of Global CO2 Emissions" 4th International Conference on Efficiency, Cost, Optimizations, Simulation and Environmental Impact of Energy 2011, Serbia, 2011

Trygg L, Thollander P, Broman G, "Evaluation of industrial energy audit in SME", Proceedings of the 2010 International Energy Program Evaluation Conference, France, 2010

Difs K, Wetterlund E, Trygg L, Söderström M," Biomass gasification opportunities in a district heating system", Biomass and Bioenergy, 2010

Difs K, Nilsson M, Trygg L, Nordenstam L," Energy conservation measures in buildings – a local energy system perspective", Energy, 2010

Thollander P, Svensson I.L, Trygg L, "Analyzing variables for district heating collaborations between energy utilities and industries", Energy, 2010

Amiri S, Trygg L, Moshfegh B, "Assessment of the natural gas potential for heat and power generation in the County of Östergötland in Sweden", Energy Policy, 2009

Gode J, Byman K, Persson A, Trygg L, " *Miljövärdering av el ur systemperspektiv. En vägledning för hållbar utveckling.*", B1882 IVL, 2009

Difs K, Trygg L, "Pricing district heating by marginal cost", Energy Policy, 2009

Difs K, Danestig M, Trygg L, "Increased use of district heating in industrial processes - impacts on heat load duration", Applied Energy, 2009

Trygg L, Difs K, Moshfegh B, "Absorption Cooling in CHP systems - old technique with new opportunities", Proceedings of the 10th World Renewable Energy Congress, Scotland, 2008

Difs K, Trygg L, "Increased industrial district heating use in a CHP system – economic consequences and impact on global CO2 emissions", Proceeding of the 5th European Conference on Economics and Management of Energy in Industry, Portugal, 2009

Trygg L, Difs K, Wetterlund E, Thollander P, Svensson I-L, Optimala Fjärrvärmesystem i symbios med industri och näringsliv, Fjärrsynrapport 2009:13, Svensk Fjärrvärme, 2009

Henning H, Trygg L, "Reduction of electricity use in Swedish industry and its impact on national power supply and European CO2 emissions", Energy Policy, 2008

Trygg L, Amiri S, "European perspective on absorption cooling in a combined heat and power system - a case study of energy utility and industries in Sweden", Applied Energy, 2007

Trygg L, "Swedish industrial and energy supply measures in a European system perspective", Dissertation No. 1049, Division of Energy Systems, Department of Mechanical Engineering, Linköping University, Sweden, 2006

Trygg L, Gebremedhin A, Karlsson B G, "Resource effective systems through changes in energy supply and industrial use: the Volvo - Skövde case", Applied Energy, 2006

Henning H, Trygg L, Gebremedhin A, " Enhanced biofuel utilisation in Swedish industries, buildings and district heating" Proceeding of the World Bioenergy 2006, Conference and exhibition on Biomass for Energy, Sweden, 2006

Trygg L, Karlsson B G, "Industrial DSM in a European electricity market - a case study of 11 industries in Sweden", Energy Policy, 2005

Henning D, Trygg L, Glad W, Gustafsson S-I, "Socio-technical analyses of energy supply and use in three Swedish municipalities striving toward sustainability", Proceeding of the 1st VHU Conference on Science for Sustainable Development, Ed. B Frostell, Sweden, 2005

Trygg L, "Generalized method for analysing industrial DSM towards sustainability in a deregulated European electricity market - method verification by applying it in 22 Swedish industries", Proceeding of the 2nd International Conference on Critical Infrastructures, Ed. J-C Sabonnadiere, France, 2004

C.V. Frits Møller Andersen

Education:
1980 M.Econ. from the University of Aarhus

Employment:
2013-present: Professor MSO, DTU Management Engineering
1997-2013: Head of Research Program Energy Systems Analysis, DTU Management Engineering
1992-1997: Senior scientist, Department of Policy Analysis the National Environmental Research Institute
1980-1992: Scientist/senior scientist, Energy Systems Analysis, Risø National Laboratory

Experience:
For 30 years I have worked with energy-, environmental- and macro-economic- modelling using statistical analyses and econometrics. In addition I have been head of the Energy Systems Analysis program for 15 years. I have developed a number of models within different areas of research. In macro-economics, as part of an EU-project I have developed the Danish Hermes model, and as project director for an EU-Pre-Accession project for the Lithuanian Ministry of Economy I have initiated and contributed to the developed of the first macro-econometric model of the Lithuanian economy "Litmod". Within energy- and environmental modelling I have lead the development of "EMMA" (Environmental satellite models for ADAM), developed the Frida-model used by the Danish EPA for projections of the generation of waste in DK, and developed a number of other satellite models to Adam and EMMA. EMMA is used by the Danish Energy Authority for energy demand forecasts and by Energinet.dk for annual forecasts of the demand for electricity. In addition to modelling experience I have contributed to a number of other projects and analyses e.g. the EU-Respond project and analyses of demand flexibility and the integration of VE in the energy system. Recently I have been head of the ENSYMORA-project funded by Innovation Fund Denmark. In this project I analysed hourly electricity consumption and developed models forecasting hourly consumption profiles at the national level and for local areas.
In addition I am:
Member of the advisory council on energy savings for the Ministry of Energy and Climate (Energisparerådet),
member of the board of the Danish Energy Economic Society,
member of the Danish Econometric Society

Administrative experince:
1997-2013 I have been head of the research programme Energy Systems Analysis, Risø DTU
2002-2004. Project Director for an EU Pre-Accession Project and National Energy Strategy for the Lithuanian Ministry of Economy supported by the Danish Energy Authority and the British Department of Trade and Industry. This included four fulltime employee in Lithuania, numerous sub-contractors, and a total budget of 6.4 mill Dkk. plus 100.000 GBP.

Recent grants:
2010-2015. Head of the ENSYMORA-project funded by Innovation Fund Denmark. This project included 10 partners and a total budget of 22 mill. Dkk.

2017-2020 AHEAD, ForskEl, 5.6 mill. Dkk.

Present Projects:
Participate in the projects:

- SAVE-E funded by Innovation Fund Denmark.
- INCAP funded by Innovation Fund Denmark.
- EU-H2020 PeakApp.
- Flexelterm funded by the Norwegian research council.

Selected publications:

Østergaard P.A., Andersen F.M., Kwon P.S.. Energy systems scenario modelling and long term forecasting of hourly electricity demand. System effects of electrical vehicles and individual heat pumps being flexible or not. International journal of Sustainable Energy Planning and Management. (2015)

Andersen, F.M., Larsen, H.V., N. Juul, Gaardestrup, R.B. Differentiated long term projections of the hourly electricity consumption in local areas. The case of Denmark West. Applied Energy 135 (2014) 523-538.

Hill, A.M., Dall, O.L., Andersen, F.M. Modelling recycling targets: Achieving a 50% recycling rate for household waste in Denmark. Journal of Environmental Protection. (2014)

Andersen, F.M., Larsen, H.V., Kitzing, L., and Morthorst, P.E. Who gains from hourly time-of-use retail prices on electricity? – An analysis of consumption profiles for categories of Danish electricity customers. WIREs Energy and Environment, Wiley. (2014).

Andersen, F.M., Larsen, H.V., Gaardestrup, R.B. Forecasting hourly electricity consumption in local areas in Denmark. Applied Energy 110 (2013) 147–162.

Andersen, F.M., Larsen, H.V. Boomsma, T.K. Forecasting hourly electricity load: Identification of consumer profiles and segments of customers. Energy Conversion and Management 68 (2013) p. 244-252.

Andersen, F.M., Larsen, H.V. FRIDA: A model for the generation and handling of solid waste in Denmark, *Resources, Conservation and Recycling* 65 (2012) 47– 56

Grohnheit, P.E., Andersen, F.M., Larsen, H.V. Area price and demand response in a market with 25% wind power, *Energy Policy 39* (2011) 8051–8061

Andersen, F.M., Skovgaard, M., Larsen, H.V. Municipal Waste: Generation, Management and Greenhouse Gas Emissions. *In: Waste and Environmental Policy / Editor: Mazzanti, Massimiliano ; Montini, Anna : Routledge,* (2009)

Andersen, F.M., Christensen, M.S.; Jensen, O.M.; Kofoed, N.-U.; Morthorst, P.E., Second-home electricity consumption. *Energy Policy* (2008) **36** , 280-289

Andersen, F.M., Larsen, H.V.; Skovgaard, M.; Moll, S.; Isoard, S., A European model for waste and material flows. *Resour. Conserv. Recycl.* (2007) **49** , 421-435

Jensen, T.S., Jensen, J.D.; Hasler, B.; Illerup, J.B.; Andersen, F.M., Environmental sub models for a macroeconomic model: Agricultural contribution to climate change and acidification in Denmark *J. Environ. Manag.* (2007) **82** , 133-143

Andersen, F.M., Jensen, S.G.; Larsen, H.V.; Meibom, P.; Ravn, H.; Skytte, K.; Togeby, M., Analyses of demand response in Denmark. Risø-R-1565(EN) (2006) 100 p.

Andersen, F.M., Celov, D.; Grinderslev, D.; Kazlauskas, A., A macro-econometric model of Lithuania LITMOD. *Econ. Modell.* (2005) **22** , 707-719

Andersen, F.M., Karlsson, K.B.; Grinderslev, D.; Werner, M.; Jensen, T.S., Miljømodeller til ADAM. *Nationaløkonomisk Tidsskr.* (2005) **143** , 26-42

Andersen, F.M.; Grinderslev, D.; Werner, M., Environmental satellite models for a macroeconomic model. *Environ. Resource Econ.* (2003) **24** , 197-212

Andersen, F.M. (ed.); Werner, M.; Jensen, J.D.; Jensen, T.S.; Henriksen, G.T.; Olsen, A.;Illerup, J.B.; Nielsen, C.; Winther, M., Environmental satellite models for ADAM. (Statistics Denmark, Copenhagen, 2001) 110 p.

Andersen, F.M., Klinge Jacobsen, H.; Morthorst, P.E.; Olsen, A.; Rasmussen, M.; Thomsen, T.;
Trier, P., EMMA: En energi- og miljørelateret satellitmodel til ADAM. *Nationaløkonomisk Tidsskr.* (1998) **136** , 333-349

Andersen, F.M., Klinge Jacobsen, H.; Morthorst, P.E.; Olsen, A.; Rasmussen, M.; Thomsen, T.; Trier, P., Energi- og emissionsmodeller til ADAM. (Danmarks Statistik, København, 1997) 209 p.

Andersen, F.M., The HERMES-Model for Denmark. 1989. 157 p. (Risø-M; No. 2800).

Fortegnelse over bedømmelsesudvalg til
stilling 201739 Assistant Professor in Energy Planning and Geographical Information Systems (201739) ved PLAN

Navn: Professor mso Poul Alberg Østergaard
Arbejdssted: PLAN, AAU

Navn: Professor mso Frits Møller Andersen
Arbejdssted: DTU

Navn: Professor Louise Ödlund
Arbejdssted: Linköping Universitet.

Akademisk Råd har taget stilling til, at medlemmer af bedømmelsesudvalget er sagkyndige inden for stillingsområdet på et niveau, der mindst svarer til det, der forudsættes for stillingen, dog ikke under lektorniveau.

Assistant Professor in Energy Planning and Geographical Information Systems (201739)

Position No.
201739

At Technical Faculty of IT and Design, Department of Planning, Copenhagen a position as Assistant Professor in Energy Planning open for appointment from 1 March 2018 or soon hereafter. The position is available for a period of 3 years.

The Department of Development and Planning conducts research and teaching on development and planning in a broad sense, including social science aspects as well as more technical aspects of development, and with a focus on environmental, international as well as administrative dimensions.

Job description
Research areas will be within energy planning with a focus on smart energy systems, feasibility studies and public regulation. Special attention is given to the use of Geographical Information Systems (GIS) and energy system analysis of large-scale integration of renewable energy and heating technologies. It is expected that the position will contribute to the further development and use of GIS in the research group.

Teaching will primarily be in Sustainable Cities and Sustainable Energy Planning and Management at the bachelor as well as at the master level, but also in other study programmes at the University. You may obtain further professional information from Professor Brian Vad Mathiesen, Department of Planning, e-mail: bvm@plan.aau.dk tel.: +45 9940 7218 or Henrik Lund, Department of Planning, e-mail: lund@plan.aau.dk tel.: +45 9940 8309.

Qualification requirements:

Appointment as an Assistant Professor presupposes scientific qualifications at PhD-level or similar scientific qualifications. The research potential of each applicant will be emphasized in the overall assessment. Appointment as an Assistant Professor cannot exceed a period of four years in total at Aalborg University in a temporary position (appointment at Assistant Professor level cannot exceed a period of eight years in total in Denmark). The application must contain the following:

- A statement outlining your reasons for applying, and intentions and visions with, the position.
- Your curriculum vitae, including personal data, educational background, scientific qualifications, dissemination skills, participation in committees and boards, and additional qualifications relevant for the position.
- Copies of relevant diplomas (Master of Science and PhD). On request you could be asked for an official English translation.
- A complete list of publications.
- Publications you wish to be considered by the assessment committee. You may attach up to 5 publications.
- A specification of your teaching qualifications relative to the teaching portfolio. If this is not enclosed you must include an explanation for its absence.
- References/recommendations.

An assessment committee will assess all candidates. The applications are only to be submitted online by using the "Apply online" button below.

For further information concerning the application procedure please contact Nickie Hermansen by mail nkh@adm.aau.dk or phone (+45) 9940 7902

Information regarding guidelines, ministerial circular in force, teaching portfolio and procedures can be seen here.

Workplace
Copenhagen

Agreement

Employment is in accordance with the Ministerial Order on the Appointment of Academic Staff at Universities (the Appointment Order) and the Ministry of Finance's current Job Structure for Academic Staff at Universities. Employment and salary are in accordance with the collective agreement for state-employed academics.

Deadline
05/12/2017

Apply online

Aalborg University (AAU) conducts teaching and research to the highest level in the fields of humanities, engineering, and natural, health, and social sciences.

top

C.V. Frits Møller Andersen

Education:
1980 M.Econ. from the University of Aarhus

Employment:
2013-present: Professor MSO, DTU Management Engineering
1997-2013: Head of Research Program Energy Systems Analysis, DTU Management Engineering
1992-1997: Senior scientist, Department of Policy Analysis the National Environmental Research Institute
1980-1992: Scientist/senior scientist, Energy Systems Analysis, Risø National Laboratory

Experience:
For 30 years I have worked with energy-, environmental- and macro-economic- modelling using statistical analyses and econometrics. In addition I have been head of the Energy Systems Analysis program for 15 years. I have developed a number of models within different areas of research. In macro-economics, as part of an EU-project I have developed the Danish Hermes model, and as project director for an EU-Pre-Accession project for the Lithuanian Ministry of Economy I have initiated and contributed to the developed of the first macro-econometric model of the Lithuanian economy "Litmod". Within energy- and environmental modelling I have lead the development of "EMMA" (Environmental satellite models for ADAM), developed the Frida-model used by the Danish EPA for projections of the generation of waste in DK, and developed a number of other satellite models to Adam and EMMA. EMMA is used by the Danish Energy Authority for energy demand forecasts and by Energinet.dk for annual forecasts of the demand for electricity. In addition to modelling experience I have contributed to a number of other projects and analyses e.g. the EU-Respond project and analyses of demand flexibility and the integration of VE in the energy system. Recently I have been head of the ENSYMORA-project funded by Innovation Fund Denmark. In this project I analysed hourly electricity consumption and developed models forecasting hourly consumption profiles at the national level and for local areas.
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Andersen, F.M., The HERMES-Model for Denmark. 1989. 157 p. (Risø-M; No. 2800).

Louise Ödlund (former Trygg)

Professor, Docent
Department of Management and Engineering
Linköping University (www.liu.se)

Louise Ödlund (former Trygg), Professor
Born: 7st September 1966, Citizen: Swedish

Present affiliation
- Professor in Energy Systems, Linköping University.
- Professor in Energy Technology, University of Gävle.

University education
2011 Docent in Energy Systems, Department of Mechanical Engineering, Linköping University
2006 PhD in Energy Systems, Department of Mechanical Engineering, Linköping University. "Swedish industrial and energy supply measures in a European system perspective", Supervisor Professor Björn Karlsson.
1982 MSc in Mechanical Engineering, Linköping University

Employment
2015- Guest Professor in Energy Technology, University of Gävle, Sweden
2014-2015 Professor in Energy Technology, University of Dalarna, Sweden
2013- Professor in Energy Systems, Linköping University, Sweden
2006-2013 Research Assistant, Linköping University, Sweden
2001-2006 PhD-student, Linköping University, Sweden
1997-2001 Business area manager, E.ON, Sweden
1992-1997 Research engineer, E.ON, Sweden

Short Resume

Louise Ödlund (former Trygg) is Professor in Energy System at Linköping University and Guest Professor in Energy Technology, University of Gävle. Louise completed in 1991 her M.Sc. in Mechanical Engineering at the University of Linköping. During the studies Louise was active in the student union and a member of the national board for post-secondary study assistance. Parallel to her engineering education she undertook extensive studies in mathematic.

In the years of 1991—92 Louise was employed as a teacher at the University of Linköping and at National Institute for Distance Education in Norrköping in the subject mathematics and physics. Through that period she was also involved in designing a multimedia program. During 1992-2001 Louise worked at E.ON, Norrköping. In 1997 she became Business Area Manager for new business development. She was then, among

other things, responsible for introducing district cooling in the municipality of Norrköping which included planning, designing, extension and management of the district cooling system. She was also part of the company's executive board and the MD group.

In 2001 Louise started her PhD studies at the division of Energy Systems at the University of Linköping. Her research area concerns regional and municipal energy systems with a special focus on district heating. By using optimization models she has studied how the combined energy system of energy user and energy supplier can shift in the direction of resource effectiveness and sustainability. Louise has also analyzed a great number of small- and middle sized industries in different Swedish municipalities and found measures that strongly can reduced the industries' use of energy.

Louise has several years of experience of University teaching. She has developed several university courses and co-developed the international master's program Energy and Environmental Engineering as well as the national master's program Energy, Environmental and Management. She has been Director of Studies at the division of Energy System at Linköping University for seven years and has taken extensive courses in leadership and is also a member of several boards at the University as well as within national and international authorities. Louise is part of the research school Reesbe (resource-effeicnt energy system in the built environment) interdisciplinary national research programme Energy Systems and is leading the research group for regional and municipal energy systems within the programme. She is responsible for the department's national Energy System conference that is held every second year and was also head secretary for the international conference of World Renewable Energy Conference that was held at the University of Linköping in 2011.

Louise has written several journal publications, conferences publications and reports. She has studied leadership and is supervisor for several PhD-students. Louise is involved in many research projects, both within the division as well as in co-operation with other universities. Louise is also a frequently engaged invited speaker for conferences and events.

Exampel of Publications Louise Ödlund (former Trygg)

Trygg L, Björk C, Karlsson P, Rönnelid M, Danica Djuric Ilic1 Heat collaboration for increased resource efficiency - a case study of a regional district heating system and a mine, , 5th International Symposium on District Heating and Cooling in Seoul, Korea, 2016

Nordenstam L., Bennerstam M, Trygg L, CONSIDERING INVESTMENT RESOURCES WHEN ASSESSING POTENTIAL C02 REDUCTIONS OF CHP - A CASE STUDY, 5th International Symposium on District Heating and Cooling in Seoul, Korea., 2016

Trygg L, District heating - a key element in a fully balanced renewable energy system, 2nd International Conference on Smart Energy Systems and 4th Generation District Heating 26-29 September 2016 · Aalborg

Rosén T, Trygg L, Active management of heat customers towards lower district heat return water temperature, 2nd International Conference on Smart Energy Systems and 4th Generation District Heating 26-29 September 2016 · Aalborg

Blomqvist S, Trygg L, A system perspective on altered district heating demand in multifamily buildings, 2nd International Conference on Smart Energy Systems and 4th Generation District Heating 26-29 September 2016 · Aalborg

Gustafsson G, Karlsson B, Trygg L, Rönnelid M, "CO2 emission evaluation of energy conserving measures in buildings connected to a district heating system - case study of a multi-dwelling building in Sweden", Energy 2016

Lidberg T, Olofsson T, Trygg L "System impact of energy efficient building refurbishment within a district heated region" Energy 2016

Borén S, Nurhadi L, Ny H, Karl-Henrik R, Broman G, Trygg L "A strategic approach to sustainable transport system development - Part 2: the case of a vision for electric vehicle systems in Southeast Sweden" Journal of Cleaner Production 2016

Trygg L, "Increased diffusion of renewable energy technologies – barriers and driving forces" AAG Annual Meeting, 2014

Djuric Ilic D, Dotzauer E, Trygg L, Broman G "Integration of biofuel production into district heating - part I: an evaluation of biofuel production costs using four types of biofuel production plants as case studies" Journal of Cleaner Production 2014

Djuric Ilic D, Dotzauer E, Trygg L, Broman G "Integration of biofuel production into district heating -part II: an evaluation of the district heating production costs using Stockholm as a case study" Journal of Cleaner Production 2014

Djuric Ilic D, Dotzauer E, Trygg L, Broman G "Introduction of large-scale biofuel production in a district heating system: an opportunity for reduction of global greenhouse gas emissions" Journal of Cleaner Production 2014

Djuric Ilic D, Trygg L "Economic and environmental benefits of converting industrial processes to district heating" Energy 2014

Broman G , Franca C-L, Trygg L, "Sustainable cities in a backcasting perspective", District heating association, Fjärrsyn 2013:20

Fuller R, Trygg L, "Six Million in Melbourne or a Network of Sustainable Midi-Cities? – a Thought Experiment." State of Australian Cities Conference 2013

Trygg L, " Improved energy efficiency - industrial SME and energy suppliers in a combined system" ECEE conference 2013

Thollander P, Rohdin P, Mashfegh B, Karlsson M, Söderström M, Trygg L Energy in Swedish industry 2020 – current status, policy instruments, and policy implications Journal of Cleaner Production 2013

Trygg L, Broman G, Franca C-L, *"District Heating and CHP – a Vital Role for the Development Towards a Sustainable Society?",* Urban Sustainability, Cultural Sustainability, Green Development and Clean Cars (USCUDAR 12), Spain, 2012

Djuric Ilica D, Dotzauer E, Trygg L, Broman G "Introduction of large-scale biofuel production in a district heating system – an opportunity for reduction of global greenhouse gas emissions" Journal of Cleaner Production, 2012

Franca C-L, Broman G, Robèrt K-H, Trygg L "Sustainability Self-Assessment Support: From Overall Strategy to Business Models Design Templates", Sustainable Innovation 17th International Conference, Germany, 2012

Djuric Ilica D, Dotzauer E, Trygg L, Broman G, Amiri S "Integration of a large-scale biofuel production with district heating production – an economic evaluation" Journal of Cleaner Production, under review, 2012

Thollander P, Rohdin P, Moshfegh M, Karlsson M, Söderström M, Trygg L " Energy in Swedish industry 2020 – current status, policy instruments, and policy implications", Journal of Cleaner Production, 2013

Fahlén E, Trygg L, Ahlgren E, "Assessment of absorption cooling as a district heating system strategy – A case study", Energy Conversion and Management, 2012

Djuric Ilic D, Dotzauer E, Trygg L, "District heating and ethanol production through polygeneration in Stockholm ", Applied Energy, 2012

Fahlén E, Trygg L, Ahlgren E "Potential CO2 reduction by increased integration of absorption cooling in a Swedish district energy system" 4th International Conference on Efficiency, Cost, Optimizations, Simulation and Environmental Impact of Energy 2011, Serbia, 2011

Djuric Ilic D , Trygg L, "Introduction of Absorption Cooling Process in CHP Systems – An opportunity for Reduction of Global CO2 Emissions" 4th International Conference on Efficiency, Cost, Optimizations, Simulation and Environmental Impact of Energy 2011, Serbia, 2011

Trygg L, Thollander P, Broman G, "Evaluation of industrial energy audit in SME", Proceedings of the 2010 International Energy Program Evaluation Conference, France, 2010

Difs K, Wetterlund E, Trygg L, Söderström M," Biomass gasification opportunities in a district heating system", Biomass and Bioenergy, 2010

Difs K, Nilsson M, Trygg L, Nordenstam L," Energy conservation measures in buildings – a local energy system perspective", Energy, 2010

Thollander P, Svensson I.L, Trygg L, "Analyzing variables for district heating collaborations between energy utilities and industries", Energy, 2010

Amiri S, Trygg L, Moshfegh B, "Assessment of the natural gas potential for heat and power generation in the County of Östergötland in Sweden", Energy Policy, 2009

Gode J, Byman K, Persson A, Trygg L, " *Miljövärdering av el ur systemperspektiv. En vägledning för hållbar utveckling.*", B1882 IVL, 2009

Difs K, Trygg L, "Pricing district heating by marginal cost", Energy Policy, 2009

Difs K, Danestig M, Trygg L, "Increased use of district heating in industrial processes - impacts on heat load duration", Applied Energy, 2009

Trygg L, Difs K, Moshfegh B, "Absorption Cooling in CHP systems - old technique with new opportunities", Proceedings of the 10th World Renewable Energy Congress, Scotland, 2008

Difs K, Trygg L, "Increased industrial district heating use in a CHP system – economic consequences and impact on global CO2 emissions", Proceeding of the 5th European Conference on Economics and Management of Energy in Industry, Portugal, 2009

Trygg L, Difs K, Wetterlund E, Thollander P, Svensson I-L, Optimala Fjärrvärmesystem i symbios med industri och näringsliv, Fjärrsynrapport 2009:13, Svensk Fjärrvärme, 2009

Henning H, Trygg L, "Reduction of electricity use in Swedish industry and its impact on national power supply and European CO2 emissions", Energy Policy, 2008

Trygg L, Amiri S, "European perspective on absorption cooling in a combined heat and power system - a case study of energy utility and industries in Sweden", Applied Energy, 2007

Trygg L, "Swedish industrial and energy supply measures in a European system perspective", Dissertation No. 1049, Division of Energy Systems, Department of Mechanical Engineering, Linköping University, Sweden, 2006

Trygg L, Gebremedhin A, Karlsson B G, "Resource effective systems through changes in energy supply and industrial use: the Volvo - Skövde case", Applied Energy, 2006

Henning H, Trygg L, Gebremedhin A, " Enhanced biofuel utilisation in Swedish industries, buildings and district heating" Proceeding of the World Bioenergy 2006, Conference and exhibition on Biomass for Energy, Sweden, 2006

Trygg L, Karlsson B G, "Industrial DSM in a European electricity market - a case study of 11 industries in Sweden", Energy Policy, 2005

Henning D, Trygg L, Glad W, Gustafsson S-I, "Socio-technical analyses of energy supply and use in three Swedish municipalities striving toward sustainability", Proceeding of the 1st VHU Conference on Science for Sustainable Development, Ed. B Frostell, Sweden, 2005

Trygg L, "Generalized method for analysing industrial DSM towards sustainability in a deregulated European electricity market - method verification by applying it in 22 Swedish industries", Proceeding of the 2nd International Conference on Critical Infrastructures, Ed. J-C Sabonnadiere, France, 2004

Fortegnelse over bedømmelsesudvalg til stilling P21748 Postdoc in aerial connectivity over cellular networks ved Department of Electronic Systems

Navn: Professor Preben Mogensen
Arbejdssted: Department of Electronic Systems, AAU
E-mail: pm@es.aau.dk

Navn: Associate Professor Troels B. Sørensen
Arbejdssted: Department of Electronic Systems, AAU
E-mail: tbs@es.aau.dk

Akademisk Råd har taget stilling til, at medlemmer af bedømmelsesudvalget er sagkyndige inden for stillingsområdet på et niveau, der mindst svarer til det, der forudsættes for stillingen, dog ikke under lektorniveau.

Postdoc in aerial connectivity over cellular networks

13-11-2017
Godkendt d.
Henrik Pedersen
dekan

Position No.
P21748

At the Technical Faculty of IT and Design, Department of Electronic Systems, a position as Postdoc in aerial radio connectivity over cellular networks is open for appointment from 1. January 2018, or as soon as possible thereafter. The fully funded position is available for a period of three years.

The Department of Electronic Systems is one of the largest departments at Aalborg University with a total of more than 250 employees. The department is internationally recognized in particular for its contributions within Information and Communication Technology (ICT). The research and teaching of the Department of Electronic Systems focus on electronic engineering and the activity areas are organized in the sections: Antennas, Propagation and Millimetre-wave Systems (APMS), Antennas, Propagation and Radio Networking section (APMS), Connectivity (CNT), Automation Control section (Control), Signal and Information Processing section (SIP), Wireless Communication Networks section (WCN) and Communication, Media and Information technologies (CMI). The department focuses on maintaining a close interplay with the university's surroundings - locally, nationally and internationally – as well as producing unique basic research and educating talented and creative engineers. The department collaborates with leading ICT researchers all over the world.

Job description

The main tasks of the successful postdoc candidate will be related to experimental research, testing and standardization of new radio functionalities for improved support of aerial connectivity over cellular networks. One obvious use case is connectivity of drones for beyond visual Line of Sight, requiring a highly reliable radio link. A severe aspect of aerial radio connectivity over cellular is the dramatic increase in inter cell interference from elevating the mobile device to more than 100 meters above ground level.
A key research area for the postdoc candidate will hence be on interference mitigation techniques.

- Multi-antenna and advanced transceiver at the terminal (aerial vehicle) side
- Antenna technologies and advanced transceiver technologies at the network side (including multi node technologies)
- Radio Resource Management including power-control, inter cell interference coordination, Aerial Vehicle detection etc.
- New mobility aspects of Aerial connectivity by cellular
- Techniques to ensure very high connectivity reliability

The expected qualifications for the postdoc candidate include:

- Good knowledge in radio propagation, 3G/4G cellular networks, Radio Resource Management
- Good knowledge on MIMO antenna systems and advanced transceiver technologies
- Matlab experience (being able to run and develop)
- Can work independently and as part of a team, creating results with use of Matlab based simulator.
- Running measurements/experiments with drones as part of a team.

The candidate will be involved in working with Nokia Bell Labs, several major European operators, the European DroC2om project and 3GPP UAV activities.

The successful candidate holds a PhD within a field related to wireless communications. Furthermore, he/she should be able to demonstrate enough research experience within the aforementioned topics. An excellent research track record is expected.

The project will take place at the Wireless Communications Networks section (WCN), Department of Electronic Systems, Aalborg University. The WCN section conducts research in areas such as radio access technologies, systems, network planning, resilience and quality of service, etc.

You may obtain further information from Professor Preben E. Mogensen (phone: +45 9940 8818, email: pm@es.aau.dk), Department of Electronic Systems.

Qualification requirements:
Appointment as Postdoc presupposes scientific qualifications at PhD-level or similar scientific qualifications. The research potential of each applicant will be emphasized in the overall assessment. Appointment as a Postdoc cannot exceed a period of four years in total at Aalborg University.

The application must contain the following:

- A motivated text wherein the reasons for applying, qualifications in relation to the position, and intentions and visions for the position are stated.
- A current curriculum vitae.
- Copies of relevant diplomas (Master of Science and PhD). On request you could be asked for an official English translation.
- Scientific qualifications. A complete list of publications must be attached with an indication of the works the applicant wishes to be considered. You may attach up to 5 publications.
- Dissemination qualifications, including participation on committees or boards, participation in organisations and the like.
- Additional qualifications in relation to the position. References/recommendations.
- Personal data.

The applications are only to be submitted online by using the "Apply online" button below.

An assessment committee will assess all candidates.

For further information concerning the application procedure please contact Anne Christoffersen by mail ach@adm.aau.dk or phone (+45) 9940 9680.

Information regarding guidelines, ministerial circular in force and procedures can be seen here.

Workplace
Aalborg

Agreement
Employment is in accordance with the Ministerial Order on the Appointment of Academic Staff at Universities (the Appointment Order) and the Ministry of Finance's current Job Structure for Academic Staff at Universities. Employment and salary are in accordance with the collective agreement for state-employed academics.

Deadline
05/12/2017

Apply online

Aalborg University (AAU) conducts teaching and research to the highest level in the fields of humanities, engineering, and natural, health, and social sciences.

top

Fortegnelse over bedømmelsesudvalg til
stilling P21752 Postdoc in Control Theory ved Institut for Elektroniske Systemer

Navn: Professor Rafal Wisniewski
Arbejdssted:
E-mail: raf@es.aau.dk

Navn: Lektor John-Josef Leth
Arbejdssted:
E-mail: jjl@es.aau.dk

Akademisk Råd har taget stilling til, at medlemmer af bedømmelsesudvalget er sagkyndige inden for stillingsområdet på et niveau, der mindst svarer til det, der forudsættes for stillingen, dog ikke under lektorniveau.

28.11.17

Postdoc in Control Theory

Godkendt d. _____
Henrik Pedersen
dekan

Position No.
P21752

At the Technical Faculty of IT and Design, Department of Electronic Systems, a position as Postdoc in Control Theory is open for appointment from January 15 or soon thereafter and it is available for a period of 2 years.
The Department of Electronic Systems is one of the largest departments at Aalborg University with a total of more than 250 employees. The department is internationally recognized in particular for its contributions within Information and Communication Technology (ICT). The research and teaching of the Department of Electronic Systems focus on electronic engineering and the activity areas are organized in the sections: Antennas, Propagation and Millimetre-wave Systems section (APMS), Automation Control section (Control), Connectivity section (CNT), Signal and Information Processing section (SIP), Wireless Communication Networks section (WCN) and Communication, Media and Information technologies (CMI).
The department focuses on maintaining a close interplay with the university's surroundings - locally, nationally and internationally – as well as producing unique basic research and educating talented and creative engineers. The department collaborates with leading ICT researchers all over the world.

Job description

The candidate will be a team member of the CPS group comprising two full professors, 3 Associate Professors, 2 Postdocs, 2 PhD students, and 2 industrial PhD students. The background in the Group stretches from mathematics to engineering. Specifically, it covers dynamical systems, topology and algebraic geometry within mathematics, control theory, stochastic systems, and robotics within engineering.

The research will be carried out in control theory. Specifically, the research area comprises of advancing the Lyapunov density theory and devising conditions for stability which are numerically sound and hence can be checked by an algorithm. The aim of the work is to obtain non-conservative conditions for almost sure stability, and to develop optimization method leaning on polynomial certificates of positivity approximating the exact Lyapunov density. The security of computation will be in the focus. This will be the second focus of the post-doc project, i.e., methods for a secure optimization platform where optimization is performed on the cipher-text and the result is the cipher-text version of the optimal solution. At the stage of implementation of the optimal solution, the agents which are responsible of implementing the solution will subsequently be able to only decipher information relevant to their own operation.

You may obtain further professional information from professor Rafael Wisniewski by mail **raf@es.aau.dk** or phone (+45) 9940 8762.

Qualification requirements:
Appointment as Postdoc presupposes scientific qualifications at PhD-level or similar scientific qualifications. The research potential of each applicant will be emphasized in the overall assessment. Appointment as a Postdoc cannot exceed a period of four years in total at Aalborg University.

The application must contain the following:

- A motivated text wherein the reasons for applying, qualifications in relation to the position, and intentions and visions for the position are stated.
- A current curriculum vitae.
- Copies of relevant diplomas (Master of Science and PhD). On request you could be asked for an official English translation.
- Scientific qualifications. A complete list of publications must be attached with an indication of the works the applicant wishes to be considered. You may attach up to 5 publications.
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Deadline
07/12/2017

Apply online

Aalborg University (AAU) conducts teaching and research to the highest level in the fields of humanities, engineering, and natural, health, and social sciences.

top

Anledning / mødeforum og dato:	AR-møde 20176 d. 6. december 2017

AALBORG UNIVERSITET

Fakultetskontoret for ENGINEERING, SUND og TECH

Dokument dato: 29. november 2017
Dokumentansvarlig: Kristian Vagn Nielsen
Senest revideret:
Senest revideret af:
Sagsnr.:

Sagsfremstilling

Overskrift og varighed:	Høring af rektors forslag til de akademiske råd om rektors forslag til budget-principper fra Budget 2019
Sagsbehandler:	Kristian Vagn Nielsen
Sagsfremstilling:	Fakultetet har fra Rektorsekretariatet modtaget høringsskrivelse til de akademiske råd om rektors forslag til budgetprincipper fra og emd Budget 2019. Bemærkninger fra de akademiske råd stiles til rektor senest 13. december 2017. Rektor har haft møder med formændene for AR på de fem fakulteter for at inddrage deres kommentarer i det videre arbejde. *Rammerne for arbejdet med ny rektormodel* Ministerielle forhold. Den endelige aftale om bevillingsreform for uddannelse blev offentliggjort 24. november 2017 under overskriften 'Nyt bevillingssystem med fokus på kvalitet og overgang til arbejde'. Reformen betoner betydningen af et styrket ledelsesrum, strategiske prioriteringer og kvalitet (frem for kvantitet). Grundelementerne i reformen: Et grundtilskud (25%) Et aktivitetstilskud (STÅ- taxameterbevilling) (67,5%) Et resultattilskud (beskæftigelsestilskud og bonustilskud) (7,5%) AAU-forhold. Internt på AAU fremhæver rektor betinget positiv institutionsakkreditering, AAU-strategi, dimensionering af flere uddannelser og opdeling af TEKNAT i to nye fakulteter som væsentlige elementer, der skal håndteres af den nye model. Bag budgetmodellen ligger endvidere generelle overvejelser om AAU som én institution, muligheden for at prioritere på universitetsniveau og agere proaktivt i forhold til muligheder og udfordringer samt budgetsikkerhed for de enkelte hovedområder. **Rektors forslag til budgetprincipper 2019-2021 gennemgås på mødet.** *Særlige nye elementer:* Rektors budgetmodel arbejder som noget nyt med en pulje til universitetsbrede indsatser, finansieret ved 5% af uddannelsesmidlerne og 5% af basisforsk-

	ningsmidlerne. Herudover afsættes 20% af uddannelsesmidlerne til fakultetsbrede indsatser. Rektorsekretariatet har udarbejdet 'Principper og proces for ledelsesmæssig prioritering af uddannelses- og basisforskningsmidler'. Det nuværende FS-bidrag opdeles i et bidrag til finansiering af Fællesadministration (FS-bidrag) og et bidrag til finansiering af fællesuniversitære aktiviteter (FU-bidrag). Tilskudsfinansierede aktiviteter udgår af beregningsgrundlaget, således at bidragsprocenterne alene fastsættes i forhold til og beregnes af de ordinære eksterne indtægter. Finansieringen af CAS-medarbejdere flyttes til Fællesadministrationen og bliver dermed en del af FS-bidraget, som forhøjes. Husleje falder tilsvarende. Implementeringsbidraget, som blev indført ved opdelingen af TEKNAT i ENG og TECH, bortfalder i det fremlagte forslag. *Konsekvensberegning* Der er lavet en konsekvensberegning dels af betydningen af ministeriets nye model, dels af omlægningen af interne bidrag herunder bortfald af implementeringsbidraget. Konsekvensberegningen viser, at TECH alt andet lige forbedrer sin økonomiske ramme i den nye model.
Indstilling:	Det indstilles, at akademisk råd udarbejder et høringssvar, som efterfølgende sendes til rektor
Bilag:	Materiale udsendt fra rektorsekretariatet til AR: Bilag 1: Høringsskrivelse Bilag 2: Visuel model for budgetprincipper 2019 Bilag 3: Notat om rektors budgetprincipper 2019, som beskriver principper og indeholder økonomiske konsekvensberegninger Bilag 4: Notat om principper og proces for ledelsesmæssig prioritering af uddannelses- og basisforskningsmidler. Bilag 3 er vedlagt til de akademiske råds orientering.

AALBORG UNIVERSITET

Rektorsekretariatet
Fredrik Bajers Vej 5
Postboks 159
9100 Aalborg

Til de akademiske råd og Hovedsamarbejdsudvalget på AAU

Sagsnr.: 2017-040-00033

22-11-2017

DRØFTELSE AF ÆNDRING AF UNIVERSITETETS BUDGETPRINCIPPER FRA OG MED BUDGET 2019

I henhold til § 15 stk. 2 i Universitetsloven af den 18. marts 2015 og i henhold til § 5 stk. 2 i Cirkulære om aftale om samarbejde og samarbejdsudvalg i staten af den 27. august 2013 har de akademiske råd og Hovedsamarbejdsudvalget blandt andet til opgave at drøfte budgetprincipper. Derfor fremsendes hermed rektors forslag til nye budgetprincipper for Aalborg Universitet gældende fra og med Budget 2019 til drøftelse.

Vedlagt høringsskrivelsen til kommentering er:

Bilag 1: Visuel model for budgetprincipper 2019

Bilag 2: Notat om rektors budgetprincipper 2019, som beskriver principper og indeholder økonomiske konsekvensberegninger

Ud over høringsmaterialet i bilag 1 og 2 er der i bilag 3 vedlagt et notat om principper og proces for ledelsesmæssig prioritering af uddannelses- og basisforskningsmidler. Bilag 3 er vedlagt til de akademiske råds og Hovedsamarbejdsudvalgets orientering.

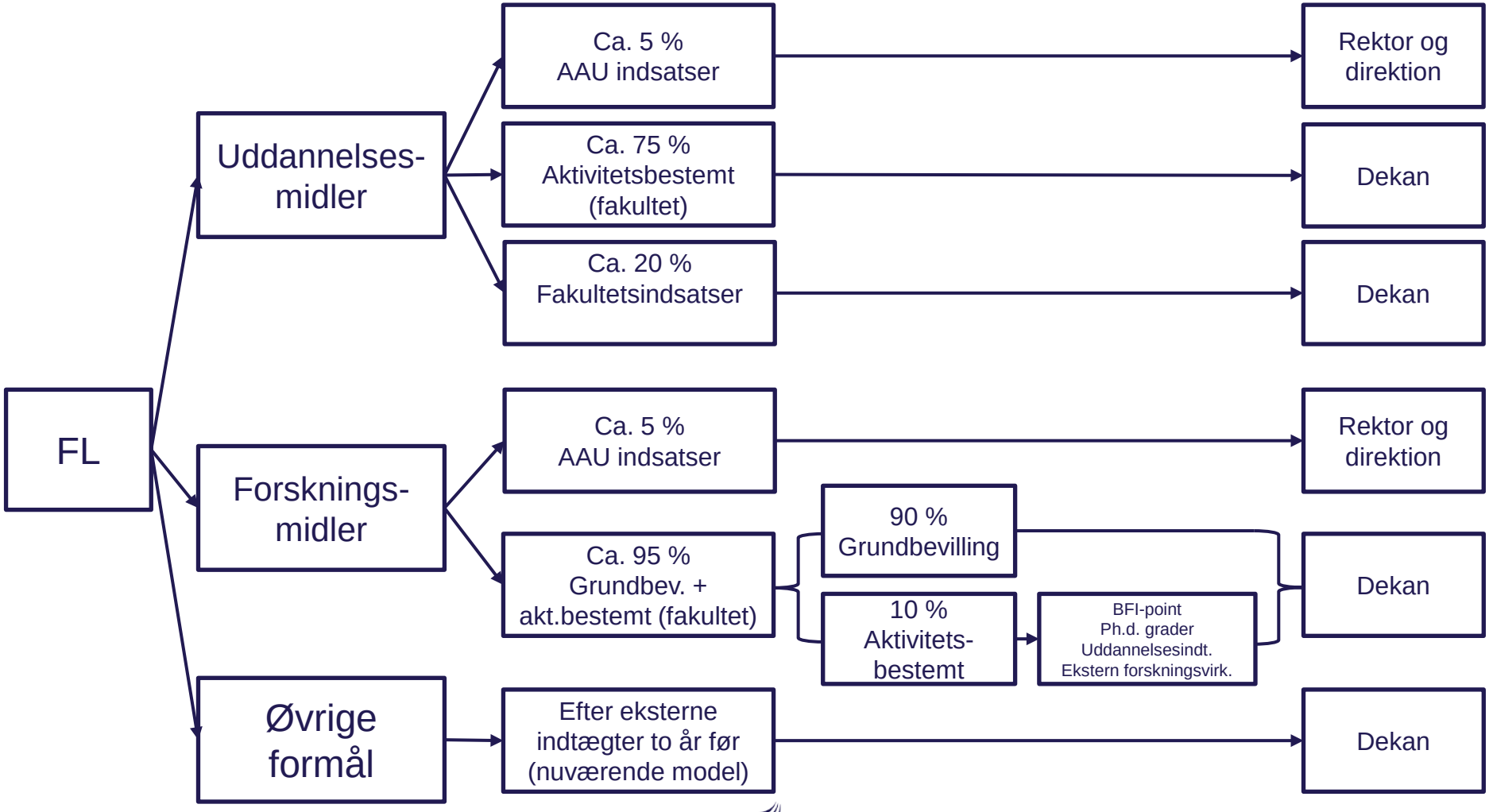
Vi skal bede om, at bemærkninger fra de akademiske råd og HSU stiles rektor og fremsendes pr. mail til chefkonsulent Lone Justesen loj@adm.aau.dk og specialkonsulent Vibeke Pedersbæk vp@adm.aau.dk senest onsdag den 13. december 2017.

Med venlig hilsen

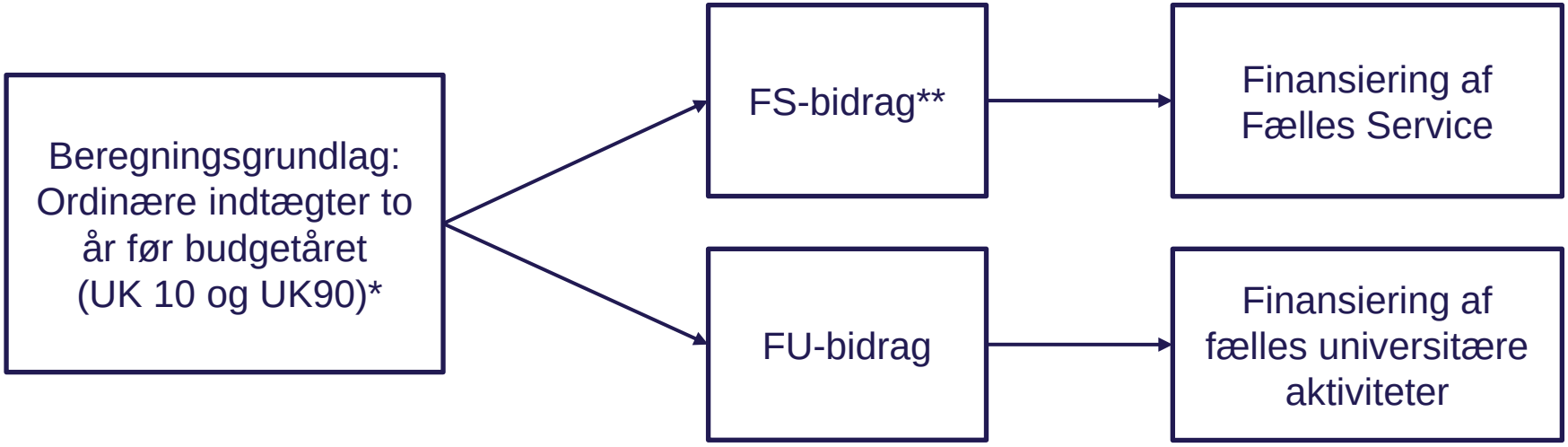
Per Michael Johansen
Rektor

FORSLAG TIL BUDGETPRINCIPPER 2019-2021

AALBORG UNIVERSITET



AALBORG UNIVERSITET



* Det betyder, at tilskudsfinansierede aktiviteter (UK 95 og UK 97) udgår af beregningsgrundlaget.
** CAS medarbejdere finansieres fremadrettet via FS-bidraget og udgår dermed af lokalebidraget. Dette medfører en lavere brutto-m2 pris og en tilsvarende stigning i FS-bidragsprocenten.

AALBORG UNIVERSITET

Økonomistyringsenheden
Fr. Bajersvej 7 F
Postboks 159
9100 Aalborg

Sagsbehandler:
Lone Justesen
Telefon: 9940 3952
Email: loj@adm.aau.dk

Dato: 21. november 2017
Sagsnr.: 2017-121-00008

Rektors forslag til budgetprincipper fra 2019

Bestyrelsen godkendte på sit møde den 23. juni 2015 universitetets interne principper for fordeling af tilskud, bevillinger og indtægter mellem hovedområderne og godkendte samtidig en model til finansiering af Fælles Service (FS). Principperne blev godkendt for perioden B2016 til og med B2018 og skal derfor eksplicit drøftes med henblik på eventuelle justeringer med virkning fra B2019.

Rektor igangsatte derfor i foråret 2017 et arbejde hermed, således at bestyrelsen på sine møder i februar og april 2018 kan drøfte og beslutte, efter hvilke principper universitetets finanslovsmidler fra budgetår 2019 skal fordeles mellem hovedområderne, herunder hvordan de fælles aktiviteter skal finansieres. Rektor har inden sin indstilling til bestyrelsen løbende orienteret og drøftet sine ideer til principper med direktionen og hovedsamarbejdsudvalget (HSU). Næstformændene for de akademiske råd har i et indledende møde med rektor i foråret 2017 haft lejlighed til at drøfte de nuværende budgetprincipper, herunder fordele og ulemper ved forskellige mulige fordelingsprincipper.

HSU vil på sit møde 6. december 2017, jf. samarbejdscirkulærets § 5 stk. 2, drøfte rektors endelige forslag til budgetprincipper fra B2019, og de Akademiske Råd vil ligeledes have mulighed for at drøfte forslaget på møder i december måned, jf. universitetslovens § 15. stk. 2. Bestyrelsen har en første drøftelse af rektors forslag til nye budgetprincipper på sit møde 26. februar 2018 og en endelig behandling og beslutning på sit møde 9. april 2018.

Budgetprincipperne forventes at være gældende for perioden B2019-B2021, hvorefter der eksplicit skal tages stilling til eventuelle ændringer heraf..

Interne og eksterne forhold af betydning for kommende budgetprincipper

Siden vedtagelsen af de nuværende budgetprincipper gældende fra 2016 er der sket flere ændringer eksternt og internt, som vil få betydning for en ændring af de interne budgetprincipper, der samtidig skal kunne imødekomme de udfordringer, som universitetet står overfor inden for kerneopgaverne uddannelse, forskning og vidensdeling, herunder samarbejde med det omgivende samfund. Strategien Viden for verden er blevet vedtaget og er nu under implementering, og samtidig er der besluttet flere større organisatoriske ændringer med virkning fra 1. januar 2017. Dels er Det teknisk-naturvidenskabelige Fakultet blevet opdelt i fakulteterne: Det ingeniør- og naturvidenskabelige Fakultet og Det tekniske Fakultet for IT og Design, og dels er AAU-Innovation blevet reorganiseret – Innovation og Forskningsstøtte - som en stabsfunktion under rek-

tor. AAU fik en betinget positiv institutionsakkreditering i 2016, flere af uddannelserne er blevet dimensioneret og regeringen har varslet en bevillingsreform for uddannelserne med virkning fra 2019.

Regeringen fremlagde i maj 2017 sit udspil til ny bevillingsreform for heltidsuddannelse, som medfører væsentlige ændringer i beregningen af og sammensætningen af uddannelsesbevillingen for så vidt angår taxameterbevillinger (STÅ) og færdiggørelsesbevillinger og endvidere tilføjes flere nye delposter. Bevillingsreformen, som endnu ikke er endelig vedtaget, forventes at træde i kraft fra finanslov 2019. Ifølge udkastet vil bevillingsreformen generelt have følgende elementer og sammensætning:

- Et grundtilskud
- Et aktivitetstilskud (STÅ- taxameterbevilling)
- Et resultattilskud (beskæftigelsestilskud og bonustilskud)
- Et kvalitetstilskud (konkret aftale mellem ministerium og universitet)
- Et campus-tilskud (udbud uden for universitetsbyernes hovedcampus)
- Kompensation (de første tre år).

Ifølge udkastet fra maj 2017 udgør grundtilskuddet cirka 20%, taxameterbevillingen (STÅ) cirka 70% og kvalitets- og resultattilskuddene cirka 10% af den samlede uddannelsesbevilling for heltidsuddannelse. Grundtilskuddet skal understøtte den strategiske prioritering på universiteterne, aktivitetstilskuddet skal følge uddannelsesaktiviteterne (via STÅ-taxameterbevilling) og resultattilskuddet skal styrke universiteternes fokus på tidligere færdiggørelse af bachelorer og kandidater og hurtigere overgang til beskæftigelse. Resultattilskuddet udmøntes ifølge udkastet på baggrund af universitetets samlede resultat for nyuddannedes overgang til beskæftigelse og de studerendes gennemsnitlige studietid. Kvalitetstilskuddet er på sektorniveau sammensat af de midler, som grundet manglende målopfyldelse for så vidt angår beskæftigelse og færdiggørelse ikke bliver udmøntet til universiteterne som resultattilskud. Kvalitetstilskuddet forventes udmøntet via en konkret aftale mellem universitet og ministerium – sandsynligvis via de strategiske rammekontrakter. Kompensationen udfases over en treårig periode og udmøntes til de universiteter, hvis samlede uddannelsestilskud falder med mere end en procent i overgangsåret.

Regeringen ønsker med reformudspillet dels i højere grad at understøtte *kvalitet* i uddannelserne, dels et øget fokus på nyuddannedes overgang til beskæftigelse og dels at understøtte *et styrket ledelsesrum* og en *løbende strategisk prioritering* på universiteterne. Regeringens udspil og intentionerne heri vil nødvendigvis have en betydning for, hvordan vi fremadrettet internt bør fordele finanslovsmidlerne mellem de faglige hovedområder.

Generelle overvejelser om budgetprincipper

Det primære fokus for de interne fordelingsprincipper har dels været hensynet til Aalborg Universitet som én institution, således at den forventede positive institutionsakkreditering opnås og strategien Viden for verden, de prioriterede aktiviteter og AAU's værdier understøttes og dels hensynet til AAU's placering i universitetslandskabet på sigt – såvel nationalt som internationalt.

Da universitetets indtægter skal fordeles mellem fem faglige og forskellige hovedområder for så vidt angår omfanget af uddannelsesaktiviteter, forskeruddannelsesaktiviteter, eksternt finansierede forskningsaktiviteter og eksperimentelle/ikke eksperimentelle forskningsområder og træk på de fælles universitære ydelser og puljer, vil der - alt andet lige – altid være forskellige interesser i, hvad der bør vægtes i en intern fordelingsmodel.

Det er derfor centralt, at en ny intern fordelingsmodel er enkel, gennemskuelig, nem at forklare og samtidig sikrer hovedområderne budgetstabilitet såvel i det enkelte budgetår som i budgetoverslagsårene.

Data, der er anvendes i modellen, bør som hovedregel være data, der opgøres eller tælles i andre sammenhænge. Det vil sige, at data som hovedregel ikke skal opgøres separat eller tælles anderledes alene til brug

for AAU's interne fordelingsmodel. Data, der anvendes i modellen, vil dermed kunne genfindes i officielle statistikker og vil dermed medvirke til at skabe genkendelighed omkring data, gennemskuelighed og gennemsigtighed omkring modellen. Endvidere vil det rent administrativt spare ressourcer ikke at skulle opgøre data på en særskilt måde alene til brug for den interne model, herunder at drøfte validiteten af de opgjorte data.

Selv om de enkelte indtægtstyper, fx uddannelse og forskning, fordeles efter forskellige parametre, er det vigtigt at understrege, at de enkelte hovedområder tildeles én samlet budgetramme, som hovedområdets ledelse (dekan/universitetsdirektør) skal disponere efter en intern budgetmodel under hensyn til Viden for verden, kerneaktiviteterne i øvrigt, bevillingsforudsætninger og indgåede aftaler med universitetsledelsen, således at universitetet samlet set opfylder sin formålsforpligtigelse.

Forslag til nye interne fordelingsprincipper fra B2019

I det følgende vil rektors forslag til interne fordelingsprincipper fra B2019 blive beskrevet.

Der stilles forslag om ændringer i den interne fordeling af midler til uddannelse og forskning og forslag til ændringer i finansieringen af Fælles Service inkl. fælles universitære aktiviteter, herunder beregningsgrundlaget samt ændringer i beregningsgrundlaget for Campus Service/ lokalebidraget.

For uddannelse stilles der alene forslag om ændringer i heltidsuddannelse, herunder i tildelingen af taxameterindtægter for heltidsuddannelse[1] (STÅ) og færdiggørelsesbonus, jf. udspil til ekstern bevillingsreform af maj 2017.

Der stilles ingen forslag om ændringer til fordelingen af bevillinger til Uddannelse i øvrigt, til Myndighedsbetjening og til bevillingen til Øvrige formål.

Heltidsuddannelse

For at imødekomme fælles udfordringer og prioriteringer på uddannelsesområdet har universitetsledelsen behov for eksplicit at kunne prioritere og sætte retning inden for uddannelsesområdet samtidig med, at de enkelte fakultetsledelser har behov for en vis grad af budgetsikkerhed inden for eget hovedområde. Under hensyn hertil foreslås følgende model for intern fordeling af uddannelsesmidlerne (heltidsuddannelse):

- Af budgetårets bevilling til heltidsuddannelse[2] fordeles ca. 5% efter en ledelsesmæssig prioritering på universitetsniveau (rektorat og direktion)
- Af budgetårets bevilling til heltidsuddannelse fordeles ca. 75% til det hovedområde, som har genereret indtægterne[3] (dekan)
- Af budgetårets bevilling til heltidsuddannelse fordeles ca. 20% mellem fakulteterne i forhold til deres andel af den aktivitetsbestemte bevilling i budgetåret til initiativer inden for fakulteternes eget område (dekan)

Under forudsætning af, at regeringens udspil på uddannelsesområdet bliver en realitet, betyder ovennævnte, at rektorat og direktion vil prioritere og fordele dele af uddannelsesrammen til fælles udfordringer på universitetsniveau, mens andre dele af uddannelsesbevillingen vil blive udmøntet direkte til fakulteterne. Aktivitets-

[1] Ekskl. adgangskursus, som alene udbyder adgangsgivende aktiviteter til ingeniør- og maskinmesteruddannelser og som er finansieret af Undervisningsministeriet (UVM)
[2] Bevillingen er ekskl. bevillingen genereret af Adgangskursus.
[3] Det forventes efter udspil til ekstern bevillingsreform at alene ca. 70% af uddannelsesbevillingen kan henføres direkte til det hovedområde, som har genereret indtægten. De resterende ca. 5% fordeles derfor forholdsmæssigt mellem hovedområderne i forhold til deres andel af den aktivitetsbestemte bevilling (STÅ-bevilling).

bevillingen (STÅ-taxameterbevilling) vil blive fordelt til det hovedområde, som har genereret indtægten. Internt på universitetet vil uddannelsesbevillingen fra ministeriet dermed blive set som en samlet bevilling og ikke en række af øremærkede delbevillinger, hvilket det heller ikke er. Samtidig vil intentionerne med den eksterne bevillingsreform om blandt andet et styrket ledelsesrum og en strategisk prioritering blive imødekommet ved en intern ledelsesmæssig prioritering og intern dialog om visse af midlerne både på fakultetsniveau og universitetsniveau. Endelig vil en vis grad af budgetsikkerhed for de enkelte fakulteter fortsat være til stede via den aktivitetsbestemte bevilling.

En større del af den ledelsesmæssige prioritering af midler på universitetsniveau (direktion) vil blive udmøntet for og over en flerårig budgetperiode, hvilket også vil bidrage til budgetsikkerhed årene imellem. En flerårig udmøntning er betinget af, at de aktiviteter, som midlerne udmøntes til, igangsættes, og de forventede resultater forventes at nås inden for aftaleperioden, såfremt forudsætningerne herfor har været til stede. I modsat fald kan der blive tale om en anden fremadrettet refordeling af midlerne.

Såfremt direktionen i visse tilfælde ikke prioriterer og fordeler alle midler afsat til ledelsesmæssig prioritering, vil de *ikke disponerede* midler blive fordelt forholdsmæssigt mellem de faglige hovedområder efter aktivitetsbevillingen, således at det sikres, at alle uddannelsesmidlerne bliver budgetteret og anvendt i budgetåret.

Basisforskning

Under hensyn til fælles udfordringer og prioriteringer på universitetsniveau har ledelsen (rektor og direktion) behov for direkte at kunne prioritere og dermed fordele visse dele af basisforskningsmidlerne samtidig med, at de enkelte fakultetsledelser har behov for en vis grad af budgetsikkerhed inden for eget hovedområde. Samtidig udvikler hovedområderne sig aktivitetsmæssigt i forskelligt takt, hvorfor dette også bør afspejle sig i den interne fordeling af basisforskningsmidler. For at imødekomme disse behov foreslås følgende principper for den interne fordeling af basisforskningsmidler fra B2019:

- Af budgetårets basisforskningsbevilling[4] fordeles 5% efter en ledelsesmæssig prioritering (rektorat og direktion)
- Af budgetårets basisforskningsbevilling fordeles 95% efter en matematisk model som følger:
    - Som grundbevilling tildeles 90% af seneste budgetårs basisforskningsbevilling ekskl. midler tildelt som ledelsesmæssig prioritering[5]
    - De resterende 10% fordeles efter følgende parametre og vægte opgjort to år før budgetåret:
        - Uddannelsesindtægter (STÅ og deltids-taxameter) (45%)
        - Indtægter fra ekstern forskning (20%)
        - BFI-point (25%)
        - Ph.d.-grader (10%)

I forhold til parametrene i den nuværende interne forskningsfordelingsmodel udgår færdiggørelsesbonus som element i uddannelsesparameteret, da færdiggørelsesbonus fremover forventes at blive tildelt AAU på baggrund af de studerendes gennemsnitlige studietid på institutionsniveau og ikke på hovedområdeniveau, jf. ministeriets udkast af 4. maj 2017 til ny bevillingsreform for uddannelsesområdet. Endvidere udgår deltagerbetaling fra deltidsuddannelse som parameter, da dokumenterede omkostninger til deltidsuddannelse, som ikke dækkes af deltids-taxameteret, skal dækkes via deltagerbetalingen. Uddannelsesindtægter (STÅ) vedrørende Adgangskursus udgår af uddannelsesparameteret i forskningsfordelingsmodellen, idet aktiviteterne på adgangskursus er på gymnasialt niveau og finansieres af Undervisningsministeriet. Som data for parametrene anvendes data to år før budgetåret, det vil sige seneste opgjorte regnskabsdata.

Da det fortsat er højt prioriteret, at der skal være et væsentligt element af budgetsikkerhed årene imellem for de enkelte hovedområder, vil en større del af den ledelsesmæssige prioritering af midlerne blive udmøntet

[4] Det vil sige basisforskningsbevillingen på årets finanslov
[5] Det vil sige 90% af de 95%

for og over en flerårig budgetperiode. En flerårig udmøntning er betinget af, at de aktiviteter, som midlerne udmøntes til, igangsættes, og de forventede resultater forventes at nås inden for aftaleperioden, såfremt forudsætningerne herfor har været til stede. I modsat fald kan der blive tale om en anden fremadrettet refordeling af midlerne.

Såfremt direktionen i visse tilfælde ikke prioriterer og fordeler alle midler afsat til ledelsesmæssig prioritering, vil de *ikke disponerede* midler blive fordelt mellem de faglige hovedområder efter de ovenfor nævnte parametre og vægte, således at det sikres, at alle basisforskningsmidlerne bliver budgetteret og anvendt i budgetåret.

Myndighedsbetjening

Der er på institutionsniveau ingen ændringer vedrørende fordelingen af Myndighedsbetjening.

Øvrige formål

Der er på institutionsniveau ingen ændringer vedrørende den interne fordeling af Øvrige formål.

Finansiering af Fælles Service

Som det vil fremgå nedenfor, foreslås der dels en opsplitning af FS-bidraget i to nye bidrag og dels et ændret beregningsgrundlag for fordelingen af bidraget (bidragene) mellem de faglige hovedområder. Det skal samtidig foreslås, at bidragssatserne fastsættes en gang årligt – bindende for det kommende budgetår og vejledende for budgetoverslagsårene, idet det vil svare til den praksis, der har udviklet sig de seneste år.

Opdeling af FS-bidrag

Det har vist sig uhensigtsmæssigt rent formidlingsmæssigt og økonomistyringsmæssigt, at FS-bidraget går til medfinansiering af såvel FS som øvrige fælles universitære aktiviteter. De faglige hovedområder har ikke eksplicit kunnet se, hvad de har bidraget til af Fælles Service (FS) og til øvrige fælles universitære aktiviteter som fx Viden for verden med mere. Et større mindreforbrug på fx de fælles universitære puljer har kunnet opfattes som et mindreforbrug i FS og dermed en vækst i den hos FS interne allokerede egenkapital, hvilket kan opfattes som en for høj fastsat bidragsprocent. Det er ikke hensigtsmæssigt, da der primært har været tale om periodeforskydninger for aktiviteter finansieret af de fælles puljer. Endvidere har der været en tendens til at opfatte FS-bidraget alene som et forhøjet administrationsbidrag og ikke et bidrag, hvor flere af midlerne falder tilbage til de faglige hovedområder til faglige aktiviteter, fx Viden for verden med mere.

For at imødekomme dette problem og for eksplicit at forbedre økonomistyringen af henholdsvis FS og af de fælles universitære aktiviteter foreslås det:

- Det nuværende FS-bidrag opdeles i to bidrag – et FS-bidrag (administration, Fælles Service) og et FU-bidrag (øvrige fællesuniversitære aktiviteter).

Ændringen er udgiftsneutral på AAU-niveau og for de enkelte hovedområder.

Ændret beregningsgrundlag for FS-bidragsprocent

FS-bidraget er en sammenlægning af det tidligere ADM-bidrag, AUB-bidrag, ITS-bidrag og bidrag til forskellige puljer, som tidligere blev beregnet og fordelt mellem hovedområderne efter forskellige parametre og principper. Formålet med sammenlægningen var enkelthed og gennemskuelighed, men har desværre vist sig at have utilsigtede effekter. Flere af fakulteterne har internt på fakultetet som hovedregel beskattet institutternes tilskudsfinansierede aktiviteter med hele FS-bidrags-procenten (17,9 % i 2016), hvor de tidligere alene internt som hovedregel beskattede de tilskudsfinansierede aktiviteter med bidragsprocenten for administrationen (10% i 2015). Det kan betyde, at potentielle tilskudsfinansierede bevillinger ikke ansøges af institutterne eller alternativt placeres hos samarbejdspartnere, idet bidragsprocenten betragtes som en for stor og ikke acceptabel omkostning for det givne institut og forskningsgruppe, til trods for at det kunne være fag-

ligt relevant at hjemtage bevillingen. Et af indsatsområderne i Viden for verden er blandt andet hjemtagelse af tilskudsfinansierede bevillinger, hvorfor et incitament til at søge større og mere prestigefyldte bevillinger kunne være, at tilskudsfinansierede aktiviteter ikke indgår i beregningsgrundlaget for FS-bidraget og FU-bidraget. Det vil betyde, at bidragene alene beregnes i forhold til den eksterne ordinære omsætning to år før budgetåret.

Det skal derfor foreslås følgende:

- tilskudsfinansierede aktiviteter[6] udgår af beregningsgrundlaget, således af FS og FU-bidragsprocenterne alene fastsættes i forhold til og beregnes af de ordinære eksterne indtægter[7].

Omlægningen vil være udgiftsneutral på universitetsniveau, men betyde en omfordeling af bidrag de faglige hovedområder imellem.

Finansiering af Campus Service (CAS) - huslejefordelingsmodel

Der foreslås principielt ingen ændringer til de nuværende interne fordelingsprincipper af CAS for så vidt angår principperne for fordelingen af lokalebidraget mellem hovedområderne, men der foretages følgende ændring:

- finansieringen af alle CAS-ansatte flyttes fra den interne huslejefordelingsmodel til en finansiering via FS-bidraget

Denne finansiering omfatter både løn-, følge-, og huslejeomkostninger, hvoraf løn- og følgeomkostninger vil blive fratrukket de samlede bygningsomkostninger og tillagt FS's omkostninger, mens huslejeomkostningerne vil blive fuldt ud allokeret til FS i huslejefordelingsmodellen. Der vil dermed alt andet lige ske en samlet reduktion i lokalebidraget og omvendt en tilsvarende forøgelse af FS-bidraget. Denne ændring vil være udgiftsneutral på AAU niveau, men vil betyde en omfordeling af bidragsstørrelser de faglige hovedområder imellem.

Kort opsamling

I dette notat er forslagene til ændringer i de interne budgetprincipper med virkning fra B2019 beskrevet

I tabellen nedenfor er en oversigt over *de samlede konsekvenser* af såvel den eksterne bevillingsreform som de interne ændringsforslag i forhold til det nuværende eksterne bevillingssystem og de nuværende interne budgetprincipper. Beregningerne er baseret på de i notatet nævnte forudsætninger og indeholder de gensidige påvirkninger og indbyrdes sammenhænge af de enkelte ændringsforslag, og viser dermed de samlede konsekvenser. Tabellen er opdelt på hovedområdeniveau. Det skal understreges, at beregningerne illustrerer *niveauet* af ændringer, og dermed ikke er et udtryk for den konkrete faktuelle indtægtsramme, herunder bidragsramme, som vil være gældende i B2019-B2021. Her vil der ske en genberegning for det aktuelle budgetår efter de på det tidspunkt aktuelle data, fx forslaget til finanslov for 2019 og opdaterede data i øvrigt.

I tabellen ses, at AAU i fx B2019 forventes at have ca. 11,9 mio. kroner mindre til rådighed i eksterne indtægter grundet den nye eksterne bevillingsreform og samtidig forventes at have ca. 8,5 mio. kroner mindre i driftsomkostninger som følge af udliciteringen af rengøringen, hvilket alt andet lige betyder et mindre lokalebidrag. Netto er der dermed grundet såvel de eksterne som interne ændringer ca. 3,4 mio. kroner mindre til rådighed for AAU i B2019.

I B2019 vil rektor og direktion skulle prioritere en fordeling af ca. 98,1 mio. kroner blandt de faglige hovedområder.

[6] Tilskudsfinansierede forskningsaktiviteter (UK95) og andre tilskudsfinansierede aktiviteter (UK97)
[7] Ordinære indtægter (UK10) og indtægtsdækket virksomhed (UK90)

I B2019 har fx ENG – før den ovennævnte ledelsesmæssige prioritering af ca. 98,1 mio. kroner – ca. 30,2 mio. kroner mindre i eksterne indtægter, men skal samtidige betale ca. 15,6 mio. kroner mindre i lokalebidrag, ca. 16,7 mio. kroner mindre samlet i FS- og FU-bidrag og får ca. 37,1 mindre i netto-bidrag fra implementeringspuljen. Før den ledelsesmæssige fordeling af midler blandt de faglige hovedområder har ENG således i B2019 netto ca. 35,0 mio. kroner mindre til rådighed grundet de eksterne og interne ændringer.

For HUM vil der i B2019 – før den ledelsesmæssige prioritering af midler på ca. 98,1 mio. kroner – være ca. 23,5 mio. kroner mindre til rådighed i eksterne indtægter, og samtidig vil HUM skulle betale ca.6,7 mio. kroner mindre i lokalebidrag og ca. 11,6 mio. kroner mere i samlet FS-og FU-bidrag. Før den ledelsesmæssige fordeling af midler blandt de faglige hovedområder har HUM således netto ca. 28,4 mio. kroner mindre til rådighed grundet de eksterne og interne ændringer.

På ovennævnte måde skal tabellen nedenfor læses. Beløb er angivet i hele 1.000 kroner og er i 2017 prisniveau:

Oversigt over samlede ændringer mellem forslag til nye budgetprincipper og nuværende budgetprincipper (eksternt og internt):

Ændringer før ledelsesmæssig prioritering	Sum af ændringer i alt + mere i alt netto, - mindre i alt netto			Eksterne indtægter + mere i indtægt, - mindre i indtægt			Direkte driftsomkostninger + færre driftsomkst, - flere driftsomkst.			Lokalebidrag + mindre i bidrag, - mere i bidrag			FS og FU -bidrag + mindre i bidrag, - mere i bidrag			Implementeringspulje (netto)*** + overfører mindre, - modtager mindre			Sum af bidragsændringer**** + mindre i bidrag, - mere i bidrag		
	B2019	B2020	B2021	B2019	B2020	B2021	B2019	B2020	B2021	B2019	B2020	B2021	B2019	B2020	B2021	B2019	B2020	B2021	B2019	B2020	B2021
ENG	-35.039	-38.150	-57.895	-30.219	-30.330	-53.119				15.569	15.569	15.569	16.739	16.376	18.791	-37.127	-39.764	-39.136	-4.819	-7.820	-4.776
HUM	-28.386	-30.633	-38.495	-23.532	-25.955	-38.956				6.701	6.701	6.701	-11.555	-11.379	-6.240	0	0	0	-4.854	-4.678	461
SAMF	-27.543	-28.445	-37.450	-20.010	-20.979	-33.785				6.679	6.679	6.679	-14.211	-14.145	-10.344	0	0	0	-7.532	-7.466	-3.665
SUND	-6.933	-5.792	-10.254	-12.226	-11.611	-18.941				4.223	4.223	4.223	1.069	1.597	4.464	0	0	0	5.292	5.820	8.687
TECH	-3.599	-4.525	-17.489	-45.062	-48.219	-70.443				15.579	15.579	15.579	-11.243	-11.649	-1.761	37.127	39.764	39.136	41.463	43.694	52.954
FÆLLES	0	0	0	21.037	21.037	21.037	-44.589	-44.589	-44.589	4.350	4.350	4.350	19.201	19.201	19.201	0	0	0	23.551	23.551	23.551
CAS	0	0	0	0	0	0	53.101	53.101	53.101	-53.101	-53.101	-53.101	0	0	0	0	0	0	-53.101	-53.101	-53.101
Ledelse	98.119	98.231	98.220	98.119	98.231	98.220				0	0	0	0	0	0	0	0	0	0	0	0
Øvrige formål*	0	0	72.342	0	0	72.342				0	0	0	0	0	0	0	0	0	0	0	0
FS/FU-bidrag**	0	0	-24.111	0	0	0				0	0	0	0	0	-24.111	0	0	0	0	0	-24.111
AAU	**-3.381**	**-9.314**	**-15.133**	**-11.893**	**-17.827**	**-23.645**	**8.512**	**8.512**	**8.512**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

** Øvrige formål fordeles på baggrund af den eksterne omsætning to år før budgetåret. Kan derfor ikke fordeles i B2021 før midlerne i den ledelsesmæssige pulje er fordelt for B2019.*

*** FS/FU-bidraget beregnes på baggrund af den eksterne omsætning to år før budgetåret. Kan derfor ikke fordeles i B2021 mellem hovedområderne, før midlerne i den ledelsesmæssige pulje for B2019 er fordelt.*

**** Implementeringspuljen falder bort i 2019*

***** Summen af betaling af bidrag og modtagelse af bidrag vil altid gå i nul på AAU-niveau.*

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Principper og proces for ledelsesmæssig prioritering af uddannelses- og basisforskningsmidler

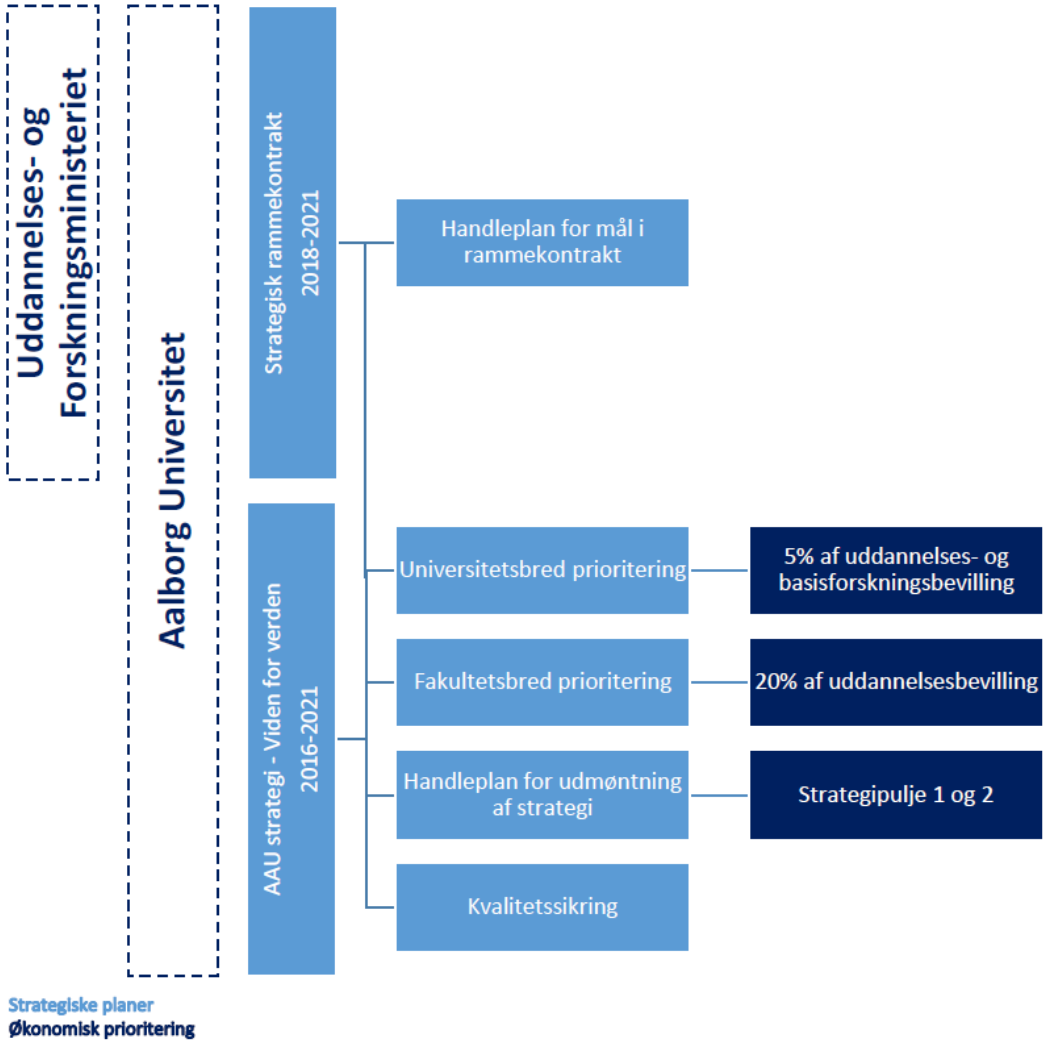
Direktionen ønsker at prioritere midler til fælles udfordringer og til understøttelse af universitetets forskellige udviklingspotentialer. På baggrund af en ledelsesmæssig prioritering i direktionen, vil 5% af uddannelsesmidlerne og 5 % af basisforskningsmidlerne fordeles i en dialog mellem rektorat og fakultetsledelse. Midlerne skal anvendes til at understøtte kerneaktiviteterne på områder, hvor direktionen ser, at der er behov for særligt fokus, som både kan være såvel drift som udvikling. Tilsvarende afsættes der 20% af uddannelsesmidlerne til intern prioritering på de enkelte fakulteter.

Priorteringen sker med intentionerne i strategien Viden for verden 2016-2021 som den underliggende præmis og skal bringe AAU tættere på realiseringen af universitetets vision og målsætninger. Det er AAU's vision, at universitetet fungerer og anerkendes som et universitet med en unik profil og med høj kvalitet i alle aktiviteter. Derudover skal AAU anerkendes for fremragende problem- og løsningsorienteret forskning, uddanne studerende til fremtidens samfund, udleve og anerkendes for problem- og projektbaseret læring samt være en attraktiv samarbejdspartner for virksomheder, institutioner og institutioner i samarbejder, som er gensidige, fokuserede og særligt udvalgt. Universitetet har som led i strategien igangsat en lang række konkrete og tværgående udviklingsindsatser som fx etableringen af talentprogrammet, tværvidenskabelige forskningsområder, kompetenceudvikling af medarbejdere osv. En fremtidig prioritering af uddannelses- og basisforskningsmidlerne på universitets- og fakultetsniveau vil ikke erstatte disse udviklingsindsatser, men *komplementere* disse og støtte op om den retning for kerneaktiviteterne uddannelse, forskning og vidensamarbejde, som er sat i Viden for verden.

Princippet om en højere grad af løbende prioritering af uddannelses- og forskningsmidlerne ligger i tråd med det udkast til reform af uddannelsesbevilllingssystemet, som forventes vedtaget i indeværende år, og som bla. har til hensigt at understøtte et styrket ledelsesrum og løbende strategisk prioritering på universiteterne. Ligesom universitetets interne budgetprincipper forventes det nye bevillingssystem effektueret fra 2019.

Direktionens og dekanernes prioritering af uddannelses- og basisforskningsmidler skal desuden samtænkes med den kommende strategiske rammekontrakt for 2018-2021 og universitetets løbende kvalitetssikring af uddannelserne. Nedenfor ses en model for universitetets samlede strategiske planlægning, som illustrerer sammenhængen mellem de forskellige strategiske planer og prioriteringer (lys blå) samt AAU's økonomiske prioriteringer (mørk blå).

Figur 1. AAU model for strategisk planlægning



Strategisk rammekontrakt 2018-2021

Den netop vedtagne politiske aftale om bedre ledelse på universiteterne betyder, at universiteternes udviklingskontrakter erstattes af 4-årige strategiske rammekontrakter. De nye strategiske rammekontrakter er en vigtig del af grundlaget for en styrket strategisk dialog mellem uddannelses- og forskningsministeren og AAU's bestyrelse. AAU fastsætter i dialog med ministeriet strategiske mål for kerneopgaverne med afsæt i AAU's strategi, udfordringer og styrkepositioner. I prioriteringen indgår også, hvordan AAU bedst kan medvirke til at indfri de politiske ambitioner på uddannelses- og forskningsområdet. Den strategiske rammekontrakt indgås for 4 år, og den første kontrakt dækker perioden 2018-2021.

Handleplan for mål i rammekontrakt

Der udarbejdes med udgangspunkt i kontrakten en handleplan for, hvorledes AAU opnår målene i rammekontrakten. Da rammekontrakten tager afsæt i AAU's strategi, vil der være et betydeligt overlap mellem handleplanen for rammekontrakten og de eksisterende handleplaner for Viden for verden 2018-2021.

AAU strategi - Viden for verden 2016-2021

Aalborg Universitets strategi - Viden for verden 2016-2021 danner rammen for universitetets strategiske planlægning af aktiviteter frem til 2021. Som nævt ovenfor vil den fremtidige ledelsesmæssige prioritering af uddannelses- og basisforskningsmidlerne på universitetsniveau og fakultetsniveau komplementere de

udviklingsindsatser, som allerede er igangsat på i regi af strategien. Viden for verden sætter derfor rammen for 1) den universitetsbrede prioritering af hhv. 5 % af uddannelsesrammen og 5% af basisforskningsmidlerne, 2) den fakultetsbrede prioritering af 20 % af uddannelsesrammen og 3) de eksisterende handleplaner for strategien. Endelig ligger 4) kvalitetssikringen af uddannelser også i tråd med visionerne i strategien:

Universitetsbred prioritering inden for kerneopgaverne (2*5%)

Puljen fordeles til områder, hvor der identificeres særlige udfordringer eller potentiale for drift og udvikling af kerneopgaven.

Den ledelsesmæssige prioritering af midlerne mellem fakulteterne sker på to direktionsmøder i årets 1. tertial. Fordelingen sker på baggrund af en række prædefinerede temaer, som fastlægges inden for rammerne af AAU's strategi Viden for verden 2016-2021 og den strategiske rammekontrakt 2018-2021. Endelig kan eksterne forhold, fx politiske forhold, betyde, at der kan opstå behov for nye prioriteringer, som ligger ud over strategi og rammekontrakt. Til brug for drøftelsen udarbejdes der desuden et sæt af nøgletal, som beskriver udviklingen i fakulteternes økonomi og kerneopgaver. Dette kan være nøgletal, som beskriver ressourcer, kvalitet i uddannelserne, forskningsaktivitet og -impact. Der udarbejdes en særskilt rapport fra Qlikview til dette formål, og udgangspunktet er, at der alene anvendes allerede eksisterende data til formålet.

For at styrke dialogen mellem rektorat og den relevante fakultetsledelse gennemføres der i årets 3. tertial et planlægnings- og opfølgningmøde mellem rektorat og fakultetsledelse. Fakultetetsledelsen defineres i denne sammenhæng som dekanat og institutledere. Studieledere og viceinstitutledere deltager, såfremt dekanen finder det hensigtsmæssigt.

Formålet med mødet er dels at skabe en fælles forståelse af universitetets og det enkelte fakultets udfordringer og muligheder og dels at aftale konkrete målsætninger i tilknytning til anvendelsen af fakultetets andel af midler til de universitetsbrede temaer. Drøftelsen tager udgangspunkt i dekanens oplæg til, hvordan midlerne konkret kan udmøntes samt i de fakultetsspecifikke nøgletal, som også lå til grund for direktionens prioritering. Som hovedregel vil der ikke skulle aflægges et specifikt økonomisk regnskab for anvendelsen af de af direktionen prioriterede midler.

Resultatet af mødet er et kort aftalepapir, som beskriver fakultetets forventede resultater på baggrund af den universitetsbrede prioritering. Aftalepapiret danner grundlag for, at der kan gøres status på udfordringer og udviklingspotentiale det efterfølgende år. Det understreges, at der ikke ønskes en model, hvor der udarbejdes en række nye KPI'er, men derimod er det formålet, at aftalepapiret skal skabe grundlag for en strategisk dialog om universitetets position og udvikling.

Følgende principper er gældende for den universitetsbrede prioritering:

Princip 1: Midlerne fordeles mellem de faglige hovedområder efter en prioritering i direktionen. Der fordeles ikke midler til Fælles Service.

Princip 2: Midlerne fordeles i hovedreglen til det hovedformål, midlerne er givet. Dvs. uddannelsesmidler fordeles til uddannelseområdet og forskningsmidler til forskningsområdet.

Princip 3: Den universitetsbrede prioritering sker med udgangspunkt i en række prædefinerede temaer og inden for rammerne af Viden for verden og den strategiske rammekontrakt. Derudover kan eksterne forhold medføre et behov for nye prioriteringer. Temaerne kan have tværgående karakter eller være monofaglige.

Princip 4: Midlerne fordeles til hovedområder med henblik på at støtte konkrete målsætninger inden for de aftalte temaer. Rektorat og dekan aftaler på baggrund af dekanens oplæg, hvordan midlerne konkret udmøntes for at opnå målsætningen inden for temaet.

Princip 5: Fordelingen af midler sker under hensyntagen til, at den prioriterede drift fortsat sikres på alle hovedområder.

Princip 6: For at sikre en fortsat høj grad af budgetsikkerhed og tilstrækkelig tid til omstilling, fordeles størstedelen af midlerne som flerårige bevillinger.

Princip 7: Fuld udmøntning af en flerårig bevilling er betinget af, at der er en begrundet forventning om, at målene inden for temaet kan nås inden for aftaleperioden. Såfremt det vurderes, at midlerne ikke anvendes efter hensigten, kan midlerne refordeles inden for aftaleperioden. Der kan dog ikke refordeles bagudrettet.

Princip 8: Opfølgningen på mål sker i dialog mellem rektor, dekan og fakultetsledelse. Der er i udgangspunktet ingen særskilt finansiel afrapportering på anvendelsen af midlerne.

Princip 9: Såfremt ledelsen i visse tilfælde ikke prioriterer og fordeler alle midler afsat til den universitetsbrede prioritering, vil de ikke disponerede midler blive fordelt forholdsmæssigt mellem de faglige hovedområder efter aktivitetsbevilling, således alle midler bliver budgetteret og anvendt i budgetåret.

Fakultetsbred prioritering inden for kerneopgaverne (20%)

For at adressere fakultetsspecifikke udfordringer og udnytte udviklingspotentialer inden for de enkelte fakulteter afsættes 20% af budgetårets uddannelsesbevilling til en fakultær prioritering på det enkelte fakultet, men inden for rammerne af AAU's overordnede strategi.

Fakulteterne fastsætter selv principper og proces for den fakultære prioritering. Det kan være en fordel, hvis principper og proces tænkes sammen med den universitetsbrede prioritering.

Handleplan for udmøntning af strategi

AAU's strategi Viden for verden 2016-2021 er allerede udmøntet i fælles og konkrete strategiske udviklingsindsatser, der understøttes af tværgående handlingsplaner, stratgipulje 1 og 2 og fakulteternes medfinansiering. Der foreslås ingen ændringer i dette koncept.

Kvalitetssikring

AAU's kvalitetssikringssystem er defineret ved otte kvalitetsområder, som relaterer sig til uddannelsernes kvalitet og relevans. Kvalitetssikringssystemet sikrer en systematisk indsamling og analyse af relevante data inden for kvalitetsområderne, hvorved det sikres, at de ansvarlige niveauer i organisationen løbende kan reagere på problemstillinger og udfordringer.

Derudover selvevalueres hver enkelt uddannelse hvert tredje år via en selvevalueringsproces, der tilvejebringer en samlet kvalitetsvurdering af uddannelsernes kvalitet og relevans. Fagmiljøerne igangsætter på det grundlag relevante udviklingsinitiativer.

For at sikre, at universitetets øverste ledelse systematisk informeres om status for universitetets uddannelser, udarbejder hvert fakultet som led i kvalitetssikringen én gang årligt en uddannelsesberetning, der behandles i direktionen. Uddannelsesberetningerne dokumenterer arbejdet med kvalitet og relevans på uddannelsesområdet og indeholder bl.a. vurderinger af udviklingen i en række nøgletal samt status for lokale initiativer på området. På baggrund af uddannelsesberetningerne udvælger Det Strategiske Uddannelsesråd hvert år tværgående indsatsområder, hvor uddannelsesberetningerne viser udfordringer, der går på tværs af fakulteterne.

Der er ikke knyttet midler op på kvalitetsystemet, men der vil som led i den universitets- eller fakultetsbrede prioritering kunne fordeles midler til uddannelsesområder med kvalitetsmæssig udfordringer eller et særligt udviklingspotentiale.

Oversigt over planlægningshjulet

Processen for den universitetsbrede prioritering indarbejdes i et samlet strategisk planlægningshjul.

Overordnet ses der 6 procestrin i den universitetsbrede prioritering:

Trin 1: Rektorat melder primo året overordnede universitetsbrede temaer ud til dekanerne. *Procesansvarlig: RS*

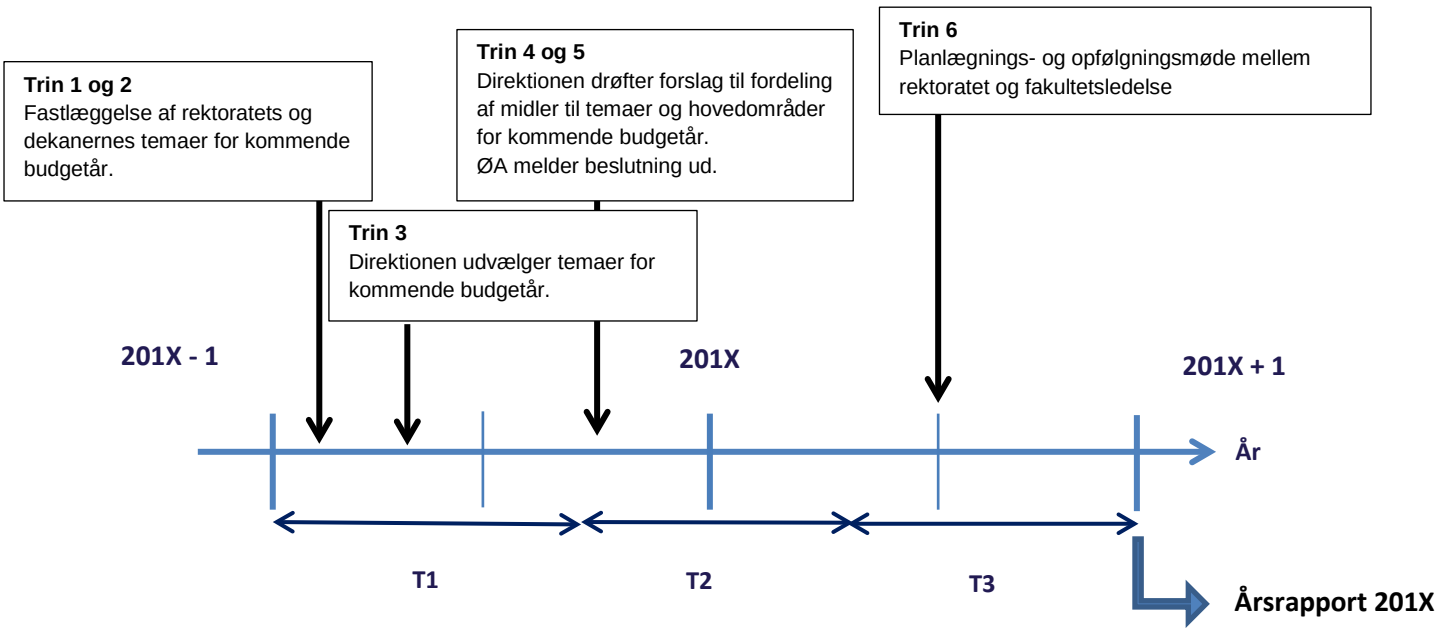
Trin 2: Dekanerne melder eventuelle supplerende universitetsbrede temaer ind til rektoratet. Der afsættes tid til, at dekanerne kan drøfte temaerne med fakultetsledelsen forinden. *Procesansvarlig: FAK*

Trin 3: Første direktionsdrøftelse, hvor direktionen udvælger et antal temaer, som den ønsker at prioritere. *Procesansvarlig: RS*

Trin 4: Anden direktionsdrøftelse, hvor rektor fremlægger forslag til fordeling af midler til såvel temaer som faglige hovedområder. *Procesansvarlig: RS + ØA*

Trin 5: Beslutning om fordeling af midler til temaer og faglige hovedområder meldes ud til økonomicentrene. (frist 30. april) *Procesansvarlig: ØA+RS*

Trin 6: Planlægnings- og opfølgningsmøde mellem rektorat og fakultetsledelse. Der indgås nærmere aftale om konkrete målsætninger inden for de universitetsbrede temaer på baggrund af oplæg fra dekan. Rektorat og fakultetsledelse drøfter desuden opfølgning på 'sidste år', udfordringer og muligheder. Derudover drøftes fakultetsspecifikke nøgletal. *Procesansvarlig: RS*



For at skabe så effektiv en proces som muligt skal detalilplanlægningen så vidt muligt tænkes sammen med processerne for budget, årsrapport, strategi, udviklingskontrakt og kvalitetssikring. Der er ambitionen, at processen for ledelsesmæssig prioritering samtidig skal betyde bortfald af eventuelle administrative processer, som overflødiggøres, herunder bla. fokusområdebeskrivelserne i forbindelse med budget og tertialsopfølgninger.

Mødeforum og dato:	akademisk råd TECH 6. december 2017

AALBORG UNIVERSITET

Fakultetskontoret for ENGINEERING, SUND og TECH

Dokument dato: 28-11-17

Dokumentansvarlig: MFG

Sagsnr.:

Sagsfremstilling til møder

Overskrift og varighed:	Fremme af god videnskabelig praksis 45. min.
Sagsbehandler:	Mark Gammeljord Sekunderet af: Prodekan Torben Larsen (medlem af det tidligere TEKNAT praksisudvalg) Helen Kjerstein Kristensen, Ph.d. kontoret (sagsbehandler for det tidligere TEKNAT praksisudvalg) Kristian Østergaard Sørensen, Ph.d kontoret (sagsbehandler for det tidligere TEKNAT praksisudvalg)
Sagsfremstilling:	**BAGGRUND:** Som følge af den nye organisering af Aalborg Universitets Praksisudvalg (AAU Praksisudvalg eller PU AAU) pr. 1. juli 2017, blev ansvaret for fremme af god videnskabelig praksis placeret hos de Akademiske Råd (AR). Dette er indskrevet i den nye vedtægt (§ 21 stk. 2 pkt. 8): *..at akademisk råd fremover fastsætter retningslinjer til fremme af god videnskabelig praksis, mens rektor nedsætter et praksisudvalg og fastsætter retningslinjer for behandling af sager om brud på god videnskabelig praksis.* På den baggrund skal AR TECH fastlægge retningslinjer for fremme af god videnskabelig praksis. De hidtil gældende retningslinjer er vedlagt som BILAG 4. **OPLÆG TIL DRØFTELSE:** For at kunne arbejde med fremme af god videnskabelig praksis er man nødt til at kende noget til det, man prøver at undgå (brud på god videnskabelig praksis) Derfor vil der på mødet den 6. december være et oplæg, der adresserer: • **3 anonymiserede eksempler** på sager, der har været behandlet i TETECH/ENG's praksisudvalg. SE BILAG 1, 2 og 3. • **Overblik over sager** på ENG/TECH siden sommeren 2016 (hvor nyt plagieringsscanningssystem – Ithenticate – blev taget i brug) • **Erfaringer fra praksisudvalgets arbejde** – set fra medlemmets stol

	• **Obligatorisk screening og forebyggelse** i dag – Ithenticate og ph.d. kurser Oplægget vil være fakta og erfaringsbaseret, og derfor være tilbageskuende i sin tilgang. Der vil kun i mindre omfang blive brugt tid på at kommentere på det nye setup omkring AAU Praksisudvalg, da denne organisering tidligere har været behandlet på AR. For gældende regler og procedurer pr. 1. juli 2017 henvises til: Regler for Praksisudvalg Procedurer for behandling af sager i AAU Praksisudvalg
Indstilling:	Det indstilles at AR, at rådet på baggrund af oplægget om det hidtidige arbejde med god videnskabelig praksis, **drøfter og beslutter en proces for, hvordan AR TECH får udarbejdet nye retningslinjer for fremme af god videnskabelig praksis.**
Bilag:	BILAG 1: Medforfatterskab AR061217 BILAG 2: PHD reference AR 061217 BILAG 3: Afvist PHD AR 061217 BILAG 4: Tidligere retningslinjer for god videnskabelig praksis TEKNAT
Beslutning:	

BILAG 1

XXX

AALBORG UNIVERSITET

Fakultetskontoret for
ENGINEERING, SUND og TECH

Dokument dato: 30. juni 2017

Dokumentansvarlig: RPO

Draft ruling in relation to breach of good scientific practice

Dear XXX,

As previously noted, the Committee on Good Scientific Practice for the Technical Faculty of IT and Design addressed a complaint received from XXX.

This letter with the opinion of the Committee is a draft of the actual decision. You thus have the opportunity to comment on the opinion of the Committee before the final decision. Please send any comments by august 1. Should you not have any further comments, please make this known as soon as possible.

Please send your comments, or a statement that you do not have any comments, to Rikke Poulsen, Dean's Secretariat, rpo@adm.aau.dk.

After august 1, the Committee will make a final decision that will then be sent to the dean who will decide on a possible sanction.

The complaint

On January 29, XXX filed a complaint that you violated the rules on good scientific practice in relation to the article "XXX" by:

- Designating yourself as first author.
- Publishing the article without approval from XXX on the final version. (See the Danish Code of Conduct for Research Integrity (2014), 4.1, i., c)
- Denying XXX the opportunity to take part in the structuring or the revision of the article with timely notice. (See the Danish Code of Conduct for Research Integrity (2014), 4.1, iii.)

Opinion of the Committee

The Committee on Good Scientific Practice has reviewed the material submitted and finds that XXX, according to your remarks in an email of January 23, 2014 that he would be first author, had a legitimate expectation that any material published with content from his Master's thesis would designate him as first author.

The Committee does not find that publishing articles, etc., without prior agreement on author sequence to be in accordance with good scientific practice.

In the opinion of the Committee, the existing disagreement concerning author sequence further means that XXX cannot be seen as accepting the article.

Based on the material submitted, the Committee also finds that complaint items two and three derive from a forced process that could be avoided and for which XXX must bear responsibility.

On behalf of the Committee on Good Scientific Practice and the Technical Faculty of IT and Design,

Rikke Poulsen

BILAG 2

AALBORG UNIVERSITET

Faculty of Engineering and Science
Niels Jernes Vej 10
9220 Aalborg East

Committee on Good Scientific Practice
Chairman:
Lars Døvling Andersen

Secretariat:
Jacob Glensvang
Phone: 9940 3444
Email: jag@adm.aau.dk

Dato: 22-11-2016
Sagsnr.: 2016-503-00006

Re: Ruling re. suspected violation of good scientific practice in the PhD dissertation

On June 24, 2016, the Faculty of Engineering and Science received a report of plagiarism in the PhD dissertation the dissertation for which you were awarded the PhD degree on by the Academic Council at the Faculty of Engineering and Science.

Based on the material received, the dean of the Faculty of Engineering and Science, Eskild Holm Nielsen, referred the case for review by the faculty's Committee on Good Scientific Practice.

The case has been considered by the faculty's Committee on Good Scientific Practice and you were given the opportunity to submit your remarks to the matter. The Committee has now reached its ruling based on the material in the case including your remarks.

Ruling

The Committee on Good Scientific Practice finds that you have acted in breach of the *Rules Regarding Disciplinary Measures for Students at Aalborg University* which at the time of your submission of the PhD thesis were the rules applying to PhD students. You have done so by not using proper citation when using other author's material in a number of incidents. At the same time the Committee acknowledges that the incidents seem to stem from an unsuitable work process on your part. Furthermore, the Committee has noted that you state that the originality of the work can be attributed to you. The Committee has found no reason to dispute this claim.

Summary of the case evaluated by the Committee on Good Scientific Practice

The dissertation submitted consists of a conference article, five journal articles and a synopsis of these six articles. In connection with the committee's review of the above-mentioned case, a preliminary report had been prepared on the extent of convergence with other sources.

The report indicated that there were 26 instances of full or partial convergence with other published sources. In all instances these were accessible sources authored by one or more authors, not including the author of the PhD dissertation. All sources, with the exception of one (Source 9), were published prior to 2012 when the dissertation was submitted.

In all of the instances, the fully or partially copied passages do not include source referencing. In the vast majority of these, the original sources appear in the PhD dissertation's reference list, but nowhere is it indicated that the dissertation to a large extent is based on fully or partially copied material.

The dissertation submitted is based on one published conference article and five published journal articles. There is significant overlap between these publications and the dissertation's synopsis. The committee particularly notes, however, that for all six of the publications concerned overlap was detected with several of the above-mentioned 26 sources. For some of the publications, a smaller portion of the text converges with other sources. In some instances, a larger portion of the article converges substantially with previously published sources.

The convergence between the dissertation's synopsis and the six articles on the one hand and the 26 previously published works detected on the other hand is found continually through all seven parts of the dissertation. Thus, the issue is not solely partial copying without source reference in the description of the background for the work, but also in the results section, discussion and conclusion.

Your remarks to the case

You have submitted a rebuttal letter (55 pages), coding material, a paper and the final assessment of your PhD thesis. In your rebuttal letter you state that you did not intend to pass of other people's works as your own. You state that it is partly the result of not using three years of notes properly, cf. "*The final report was also written under pressure and with notes taken in 3 years. I should have been more organized taking notes and reduce the material to submit to the PhD thesis*" (Rebuttal letter p. 5). Furthermore you state that it is also partly because you were inexperienced in the beginning of the PhD study thus making most of the errors in this period cf. "*I must admit that paper 1 has more irregularities compared to other papers. This reflects the inexperience at the beginning of my project*" (Rebuttal letter p. 48). From your remarks it is also clear that you do admit to having made mistakes and errors in terms of not citing other people's works properly. However, at the same time you state that the originality of the work can be entirely accredited to you cf. "*...the framework, models, designs and experiments to generate the results are entirely original, and this is of course the foundation of my dissertation*" (Rebuttal letter p. 2).

Regulatory basis

At the time the PhD dissertation was submitted to the Faculty of Engineering and Science, PhD students were subject to the "Rules Regarding Disciplinary Measures for Students at Aalborg University" of February 2009. As stated in § 3, (2):

(2) Plagiarism includes such cases, cf., however, subsections 3 and 4, where a written examination assignment in full or in part appears to have been produced by the examinee(s) even though the assignment

1. *includes identical or almost identical reproduction of the wording or works of other authors, and the extracts are not marked by quotation marks, italics, indentation or other clear indication, including that of the source,*
2. *includes long passages with a wording which is so close to that of another work or other*
3. *production etc. that comparison suggests that those passages could not have been written without the use of the other work,*
4. *includes the use of another author's wording or ideas without crediting this author in a*
5. *suitable way, or*
6. *reuses text and/or central ideas from the examinee's own previously assessed or published works without complying with the rules laid down in no. 1) and 3).*

Grounds for the ruling

The Committee on Good Scientific Practice finds that the following are documented in the analysis of your PhD thesis:

- To a significant extent, the dissertation makes use of a large number of passages that are fully or partially reproduced directly from a larger number of previously published sources without indicating a quotation or paraphrasing. The committee notes, among other things, the substantial extent of full or partial copying.
- There is extensive use of work by other authors without indication of a quotation.
- The above practice is not solely used in the synopsis but also in the previously published articles by the author (and coauthors) that the dissertation is based on.

From your remarks it is made clear that in many of the relevant passages you agree that you have acted in an inappropriate manner with regards to the use of other people's works. At the same time you state that this was not in any way your intention but rather a result of inexpedient use of three years notes and not being familiar with the correct form of citing in scientific work at the beginning of your PhD study. Finally you also state that the originality of the work can be attributed solely to you.

The Committee on Good Scientific Practice concurs that the originality of the work can be attributed to you and that as such the results of the PhD dissertation can be attributed to you. This, however, does not excuse that in several instances you have copied directly from other sources without proper referencing the original source by applying quotation marks, cursive, insertion or any other indication with source reference.

Based on the existing material, the Committee on Good Scientific Practice at the Faculty of Engineering and Science at Aalborg University thus finds that the preparation of the dissertation submitted does not comply with good scientific practice.

Hearing

This ruling was sent to you in a draft version on October 5, 2016. On October 19, 2016 you submitted your remarks to the draft ruling. The Committee on Good Scientific Practice does not find that your remarks are grounds for a changed ruling. However, it is noted that source 9 is in fact published before your thesis and this has been altered in this ruling.

This ruling will be forwarded to the PhD Study Director at the Doctoral School of Engineering and Science and the Dean of the Faculty of Engineering and Science who will decide on possible sanctions.

Yours sincerely,

Lars Døvling Andersen

Chairman, The Committee on Good Scientific Practice at the Faculty of Engineering & Science

BILAG 3

AALBORG UNIVERSITY
DENMARK

The Doctoral School of Engineering and Science
Niels Jernes Vej 10
9220 Aalborg
Denmark

Contact Person:
Kristian Østergaard Sørensen
Phone: +45 9940 3512
E-mail: krs@adm.aau.dk

Dear

According to letter of August 29, 2016 you were informed of the suspicion of a possible breach of good scientific practice in relation to your PhD thesis. You were given until September 12, 2016 to submit your comments regarding the matter. Your comments were received on August 31, 2016.

Decision
Based on the result of the plagiarism analysis and the comments submitted by you the PhD Study Director has made a decision in the matter.

You are hereby *warned* against committing any future violations to the rules of good scientific conduct at the Faculty of Engineering and Science. Furthermore your PhD thesis in its present form cannot be accepted for defense and you are therefore given the opportunity to submit a revised thesis which abides by the rules of good scientific conduct no later than 1 December 2016. The PhD Study Director advises that you consult your supervisor when revising the thesis.

Grounds for decision

The Faculty of Engineering and Science's Guidelines for Promoting Good Scientific Practice and Reviewing Cases of Scientific Dishonesty states the following:

The following situations are examples of violations of good scientific practice:
- *The publication of another person's work as one's own (plagiarism) by direct copying, paraphrasing or using another person's original ideas without giving appropriate credit.*
- *Submission of insufficient information relevant for assessment of the work, including the foundation for the data, the data and methods used, or the author's scientific qualifications.*
- *In an assessment situation, a) use of a person's own previously assessed or published works without referencing (in the same way as for other people's work), b) use of a person's own works authored jointly with others without also submitting coauthor statements, or c) disregard of the rules that apply to assessment, including the use of unauthorized aids.*

As is shown by the plagiarism analysis, parts of your papers seem to have been copied directly into the thesis without referencing the source. Although it is of course accepted to include material from your papers in the 'Kappa' this must be done in such a way that it is made clear to all, including members of the assessment committee, which parts of the PhD thesis are based directly on the papers. I.e. when you copy directly from the papers into the 'Kappa' you must make a proper reference to the original source by applying quotation marks, cursive, insertion or any other indication with source reference. This must be done in the same way as when citing other people's work.

AALBORG UNIVERSITY
DENMARK

In your thesis you have placed a note under different sections stating the following "For further information, please refer to Paper XX: "title of paper". This approach is however not sufficient in relation to applying proper references.

You may refer the above decision to the Danish Agency for Higher Education, if the appeal is based on legal issues. The appeal must be submitted to the Faculty within two weeks from the day you have been informed of the decision. If the decision is maintained, the Faculty shall issue a statement upon which you shall be granted the opportunity to comment. The Faculty shall then submit the appeal to the Agency, enclosing the statement and any comments made by you.

Best

Kristian Østergaard Sørensen

AALBORG UNIVERSITET

Det Teknisk-Naturvidenskabelige Fakultet
Niels Jernes Vej 10
9220 Aalborg

Jacob Glensvang
Telefon: 9940 3444
Email: jag@adm.aau.dk

Dato: 25. nov. 2015
Sagsnr.: [Sagsnr.]

Tidligere retningslinjer for fremme af god videnskabelig praksis

GÆLDENDE INDTIL 30. JUNI 2017.

1. Fremme af god videnskabelig praksis

Følgende indsatser har til formål at fremme god videnskabelig praksis og forebygge, at der sker brud på god videnskabelig praksis på baggrund af manglende viden om gældende regler og procedurer:

1. Udarbejdelse og vedligeholdelse af informationsmateriale
2. Obligatoriske kurser for ph.d.-studerende
3. Digital plagiatscreening
4. Fakultetets indsats
5. Behandling af emnet god videnskabelig praksis på møder i akademisk råd

2.1. Udarbejdelse og vedligeholdelse af informationsmateriale

Ved Det Teknisk-Naturvidenskabelige Fakultet udarbejdes og vedligeholdes informationsmateriale om god videnskabelig praksis herunder regler og procedure for området. Informationsmaterialet er tilgængeligt via Det Teknisk-Naturvidenskabelige Fakultets hjemmeside.

2.*2. Obligatoriske forløb vedrørende videnskabelig metodik*

Alle ph.d. studerende skal gennemføre et obligatorisk kursus i videnskabelig metodik og god videnskabelig praksis inden for teknisk-naturvidenskabelig forskning. Kurset udbydes af Den Teknisk-Naturvidenskabelige Ph.d.-skole.

2.3. Digital plagiatscreening

Det Teknisk-Naturvidenskabelige Fakultet benytter sig af digital plagiatscreening i forbindelse med indlevering af ph.d.- og doktorafhandlinger. Formålet med screeningen er en grundlæggende teknisk afdækning af, hvorvidt der er sammenfald i indholdet af et videnskabeligt arbejde og egne eller andres allerede publicerede tekster.

2.4. Fakultetets indsats

Fakultetet har løbende til opgave at informere alle medarbejdere om fakultetets holdning til god videnskabelig praksis.

2.5. Behandling af emnet god videnskabelig praksis på møder i akademisk råd

God videnskabelig praksis bliver som emne behandlet på møder i akademisk råd med det formål løbende at udvikle tiltag, der kan medvirke til fremme af god videnskabelig praksis. Emnet behandles mindst én gang årligt.

Anledning / mødeforum og dato:	Akademisk Råd TECH 6. december 2017

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Fakultetskontoret for ENGINEERING, SUND og TECH

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Overskrift og varighed:	Æresdoktor 2018 for TECH
Sagsbehandler:	Eva Hansen
Sagsfremstilling:	I forbindelse med AAUs Årsfest er det en tradition, at fakulteterne indstiller et antal højt estimerede personer til modtagelse af æresdoktorgraden. TECH har indstillet en kandidat: Professor Thomas Parisini, Imperial College, UK Der er nedsat et bedømmelsesudvalg, som er foreslået af Børge Lindberg (ES) og efterfølgende godkendt af dekan Henrik Pedersen: <u>Bedømmelsesudvalg</u>: Thomas Bak, formand Rafael Wisniewski Torben Larsen Bedømmelsesudvalget har udarbejdet dets indstilling om hvorvidt de finder vedkommende på et niveau, som afstedkommer tildeling af æresdoktorgraden. Ifølge proceduren skal Akademisk Råd godkende indstillingerne fra bedømmelsesudvalget. Den endelige godkendelse foretages af rektor med frist den 18/12- 2017.
Indstilling:	Det indstilles, at Akademisk Råd godkender indstillingerne fra bedømmelsesudvalgene.
Bilag:	Bilag 1: Bedømmelse Thomas Parisini Bilag 2: Publikationsliste - Scopus

To whom it may concern

EVALUATION OF THOMAS PARISINI AS HONORIS DOCTOR CAUSA

Thomas Parisini (TP) – born 1963 - has since 2010 been Chair in Industrial Control at Imperial College London and is Director of Research at the Department of Electrical and Electronic Engineering. TP is also Deputy Director of KIOS Research and Innovation Center of Excellence at University of Cyprus and Danieli Endowed Chair of Automation Engineering at University of Trieste. TP is the author of 85 peer reviewed journal publications, 9 book chapters, 37 invited contributions, and 157 peer reviewed conference publications. TP's H-index (Google Scholar) is 35, and he has 5,296 citations.

TP is one of the most influential researchers in the field of automatic control, which concerns system principles that make it possible to effectively understand and design physical systems and allow operation without continuous direct human intervention. His research interests include neural-network approximations for optimal control, fault diagnosis for nonlinear and distributed systems, fault-tolerant control of large-scale systems, estimation and adaptive suppression of periodical disturbances in control systems, and nonlinear networked model predictive control systems. Among several awards, he is a co-recipient of the 2014 Outstanding Paper Award of the IFAC Journal of Process Control, of the 2004 Outstanding Paper Award of the IEEE Transactions on Neural Networks, and a recipient of the 2007 IEEE Distinguished Member Award.

The scientific contributions include robust fault diagnosis methodology for detecting, isolating and accommodating faults in large-scale and nonlinear dynamic systems. Correct and timely fault detection is of major importance in the field of system engineering, and constitutes a primary problem in a broad spectrum of applications. TP has also pioneered the use of neural networks for solving fault-diagnosis problems and more generally the use of neural network approximations for optimal control and decision.

TP is recognized world-wide by the research community for his commitment to academic societies such as IEEE Control Systems Society and IFAC (International Federation of Automatic Control) and as editor for some of the most prestigious journals in the field. TP is currently Vice-President for Publications Activities of the IEEE Control Systems Society and Editor for Control Applications of the most prestigious journal in the area, Automatica. He served as Editor in Chief of the IEEE Transactions on Control Systems Technology and was previously Associate Editor of Automatica, the IEEE Transactions on Automatic Control and IEEE Trans. On Neural Networks. TP is a fellow of the IEEE and IFAC and a Distinguished Lecturer of the IEEE.

Among other activities, he was the Program Chair of the 2008 IEEE CDC (most prestigious conference in automatic control) and a General Co-Chair of the 2013 IEEE CDC. He was the ECC Editorial Board Chair at the ECC conference in Aalborg, 2016 and he is General Co-Chair of the CCTA conference 2018 in Copenhagen.

In conclusion, we find that Professor Thomas Parisini is a truly outstanding researcher, who will be a highly worthy recipients of the degree *Honoris doctor causa* at Aalborg University.

Monday, 20 November 2017

Thomas Bak
Professor AAU

Rafael Wisniewski
Professor AAU

Torben Larsen
Vice-dean, Professor AAU

Publications - SCOPUS

[AAP15] P. Ascencio, A. Astolfi, and T. Parisini. Backstepping pde design, volterra and fredholm operators: A convex optimization approach. volume 54rd IEEE Conference on Decision and Control,CDC 2015, pages 7048–7053, 2015. cited By 1.

[AAP16a] P. Ascencio, A. Astolfi, and T. Parisini. An adaptive observer for a class of parabolic pdes based on a convex optimization approach for backstepping pde design. volume 2016-July, pages 3429–3434, 2016. cited By 1.

[AAP16b] P. Ascencio, A. Astolfi, and T. Parisini. Backstepping pde-based adaptive observer for a single particle model of lithium-ion batteries. pages 5623–5628, 2016. cited By 0.

[ABB+01] A. Alessandri, M. Baglietto, G. Battistelli, T. Parisini, and R. Zoppoli. A receding-horizon estimator for discrete-time linear systems. pages 3753–3758, 2001. cited By 1.

[ABBP03] A. Alessandri, M. Baglietto, G. Battistelli, and T. Parisini. Receding-horizon estimation for noisy nonlinear discrete-time systems. volume 6, pages 5825–5830, 2003. cited By 3.

[ABBP04] A. Alessandri, M. Baglietto, G. Battistelli, and T. Parisini. New convergence conditions for receding-horizon state estimation of nonlinear discrete-time systems. volume 2, pages 2094–2099, 2004. cited By 4.

[ABP98] A. Alessandri, M. Baglietto, and T. Parisini. Robust model-based fault diagnosis using neural nonlinear estimators. volume 1, pages 72–77, 1998. cited By 2.

[ABPZ99] A. Alessandri, M. Baglietto, T. Parisini, and R. Zoppoli. A neural state estimator with bounded errors for nonlinear systems. *IEEE Transactions on Automatic Control*, 44(11):2028–2042, 1999. cited By 66.

[AMPZ96] A. Alessandri, M. Maggiore, T. Parisini, and R. Zoppoli. Neural approximators for nonlinear sliding-window state observers. volume 2, pages 1461–1463, 1996. cited By 0.

[AP95] A. Alessandri and T. Parisini. Nonlinear modelling and state estimation in a real power plant using neural networks and stochastic approximation. volume 3, pages 1561–1567, 1995. cited By 4.

[AP97a] A. Alessandri and T. Parisini. Model-based fault diagnosis using nonlinear estimators: A neural approach. volume 2, pages 903–907, 1997. cited By 15.

[AP97b] A. Alessandri and T. Parisini. Nonlinear modeling of complex large-scale plants using neural networks and stochastic approximation. *IEEE Transactions on Systems, Man, and Cybernetics Part A:Systems and Humans.*, 27(6):750–757, 1997. cited By 16.

[AP98] A. Alessandri and T. Parisini. Neural state estimators for direct model-based fault diagnosis. volume 5, pages 2874–2878, 1998. cited By 5.

[APP15] A. Assalone, G. Pin, and T. Parisini. Kernel-based continuous-time identification of hammerstein models: Application to the case of ankle joint stiffness dynamics. pages 2015–2020, 2015. cited By 0.

[APZ95] A. Alessandri, T. Parisini, and R. Zoppoli. Neural approximators for nonlinear finite-memory state estimation. volume 2, pages 1258–1265, 1995. cited By 0.

[APZ97a] A. Alessandri, T. Parisini, and R. Zoppoli. Neural approximations for state-space parametric identification of nonlinear systems. pages 1409–1414, 1997. cited By 0.

[APZ97b] A. Alessandri, T. Parisini, and R. Zoppoli. Neural approximators for nonlinear finite-memory state estimation. *International Journal of Control*, 67(2):275–302, 1997. cited By 27.

[APZ98] A. Alessandri, T. Parisini, and R. Zoppoli. Convergent neural state estimator for nonlinear stochastic systems. volume 1, pages 1076–1081, 1998. cited By 1.

[APZ99] A. Alessandri, T. Parisini, and R. Zoppoli. Sliding-window neural state estimation in a power plant heater line. volume 2, pages 880–884, 1999. cited By 3.

[APZ01] A. Alessandri, T. Parisini, and R. Zoppoli. Sliding-window neural state estimation in a power plant heater line. *International Journal of Adaptive Control and Signal Processing*, 15(8):815–836, 2001. cited By 1.

[AVPT94] A. Alessandri, F.Bini Verona, T. Parisini, and A. Torrini. Neural approximations for the optimal control of heating systems. volume 3, pages 1613–1618, 1994. cited By 6.

[BCF+16] F. Boem, R. Carli, M. Farina, G. Ferrari-Trecate, and T. Parisini. Scalable monitoring of interconnected stochastic systems. pages 1285–1290, 2016. cited By 0.

[BCP+00] M. Baglietto, C. Cervellera, T. Parisini, M. Sanguineti, and R. Zoppoli. Approximating networks, dynamic programming and stochastic approximation. volume 5, pages 3304–3308, 2000. cited By 3.

[BDMP95] R. Bolla, F. Davoli, P. Maryni, and T. Parisini. Neural approximations of optimal allocation policies for hybrid multiplexing. volume 2, pages 1327–1331, 1995. cited By 1.

[BDMP98] R. Bolla, F. Davoli, P. Maryni, and T. Parisini. An adaptive neural network admission controller for dynamic bandwidth allocation. *IEEE Transactions on Systems, Man, and Cybernetics, Part B: Cybernetics*, 28(4):592–601, 1998. cited By 3.

[BFK+17] F. Boem, R.M.G. Ferrari, C. Keliris, T. Parisini, and M.M. Polycarpou. A distributed networked approach for fault detection of large-scale systems. *IEEE Transactions on Automatic Control*, 62(1):18–33, 2017. cited By 4.

[BFP11] F. Boem, R.M.G. Ferrari, and T. Parisini. Distributed fault detection and isolation of continuous-time non-linear systems. *European Journal of Control*, 17(5-6):603–620, 2011. cited By 26.

[BFPP11] F. Boem, R.M.G. Ferrari, T. Parisini, and M.M. Polycarpou. A distributed fault detection methodology for a class of large-scale uncertain input-output discrete-time nonlinear systems. pages 897–902, 2011. cited By 8.

[BFPP12] F. Boem, R.M.G. Ferrari, T. Parisini, and M.M. Polycarpou. Distributed fault diagnosis for input-output continuous-time nonlinear systems. volume 8, pages 1089–1094, 2012. cited By 4.

[BFPP13a] F. Boem, R.M.G. Ferrari, T. Parisini, and M.M. Polycarpou. Distributed fault detection for uncertain nonlinear systems: A network delay compensation strategy. pages 3549–3554, 2013. cited By 5.

[BFPP13b] F. Boem, R.M.G. Ferrari, T. Parisini, and M.M. Polycarpou. Distributed fault diagnosis for continuous-time nonlinear systems: The input-output case. *Annual Reviews in Control*, 37(1):163–169, 2013. cited By 17.

[BFPP15] F. Boem, R.M.G. Ferrari, T. Parisini, and M.M. Polycarpou. Optimal topology for distributed fault detection of large-scale systems. *IFAC-PapersOnLine*, 28(21):60–65, 2015. cited By 6.

[BP15] F. Boem and T. Parisini. Distributed model-based fault diagnosis with stochastic uncertainties. volume 54rd IEEE Conference on Decision and Control,CDC 2015, pages 4474–4479, 2015. cited By 1.

[BPFP11a] F. Boem, F.A. Pellegrino, G. Fenu, and T. Parisini. Multi-feature trajectory clustering using earth mover's distance. pages 310–315, 2011. cited By 5.

[BPFP11b] F. Boem, F.A. Pellegrino, G. Fenu, and T. Parisini. Trajectory clustering by means of earth mover's distance. volume 18, pages 4741–4746, 2011. cited By 3.

[BPPP08] F. Blanchini, T. Parisini, F.A. Pellegrino, and G. Pin. High-gain adaptive control: A derivative-based approach. pages 3233–3238, 2008. cited By 0.

[BPPP09] F. Blanchini, T. Parisini, F.A. Pellegrino, and G. Pin. High-gain adaptive control: A derivative-based approach. *IEEE Transactions on Automatic Control*, 54(9):2164–2169, 2009. cited By 4.

[BPZ97] M. Baglietto, T. Parisini, and R. Zoppoli. Nonlinear approximations for the solution of team optimal control problems. volume 5, pages 4592–4594, 1997. cited By 10.

[BPZ99a] M. Baglietto, T. Parisini, and R. Zoppoli. Neural approximators and team theory for dynamic routing: a receding-horizon approach. volume 4, pages 3283–3288, 1999. cited By 10.

[BPZ99b] M. Baglietto, T. Parisini, and R. Zoppoli. Neural approximators for the solution of decentralized optimal control problems. pages 179–184, 1999. cited By 0.

[BPZ99c] M. Baglietto, T. Parisini, and R. Zoppoli. Team theory and neural approximators for dynamic routing in communication networks. volume 6, pages 4433–4437, 1999. cited By 2.

[BPZ01a] M. Baglietto, T. Parisini, and R. Zoppoli. Distributed-information neural control: The case of dynamic routing in traffic networks. *IEEE Transactions on Neural Networks*, 12(3):485–502, 2001. cited By 49.

[BPZ01b] M. Baglietto, T. Parisini, and R. Zoppoli. Numerical solutions to the witsenhausen counterexample by approximating networks. *IEEE Transactions on Automatic Control*, 46(9):1471–1477, 2001. cited By 30.

[BRFTP15a] F. Boem, S. Riverso, G. Ferrari-Trecate, and T. Parisini. A plug-and-play fault diagnosis approach for large-scale systems. *IFAC-PapersOnLine*, 28(21):601–606, 2015. cited By 3.

[BRFTP15b] F. Boem, S. Riverso, G. Ferrari-Trecate, and T. Parisini. Stochastic fault detection in a plug-and-play scenario. volume 54rd IEEE Conference on Decision and Control,CDC 2015, pages 3137–3142, 2015. cited By 2.

[BXFP12] F. Boem, Y. Xu, C. Fischione, and T. Parisini. A distributed estimation method for sensor networks based on pareto optimization. pages 775–781, 2012. cited By 4.

[BXFP13] F. Boem, Y. Xu, C. Fischione, and T. Parisini. Distributed fault detection using sensor networks and pareto estimation. pages 932–937, 2013. cited By 9.

[BXFP15] F. Boem, Y. Xu, C. Fischione, and T. Parisini. A distributed pareto-optimal dynamic estimation method. pages 3673–3680, 2015. cited By 2.

[CAP05a] D. Casagrande, A. Astolfi, and T. Parisini. Control of nonholonomic systems: A simple stabilizing time-switching strategy. volume 16, pages 634–639, 2005. cited By 5.

[CAP05b] D. Casagrande, A. Astolfi, and T. Parisini. A stabilizing time-switching control strategy for the rolling sphere. volume 2005, pages 3297–3302, 2005. cited By 10.

[CAP07a] D. Casagrande, A. Astolfi, and T. Parisini. A globally stabilizing time-switching control strategy for an underactuated rigid body. pages 2078–2083, 2007. cited By 3.

[CAP07b] D. Casagrande, A. Astolfi, and T. Parisini. Switching-based lyapunov function and the stabilization of a class of nonholonomic systems. *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 4416 LNCS:664–667, 2007. cited By 1.

[CAP08a] D. Casagrande, A. Astolfi, and T. Parisini. Global asymptotic stabilization of the attitude and the angular rates of an under-

actuated non-symmetric rigid body. *Automatica*, 44(7):1781–1789, 2008. cited By 32.

[CAP08b] D. Casagrande, A. Astolfi, and T. Parisini. Stabilization of a class of non-holonomic systems by means of switching control laws. pages 310–315, 2008. cited By 1.

[CAP09] D. Casagrande, A. Astolfi, and T. Parisini. Switching-driving lyapunov function and the stabilization of the ball-and-plate system. *IEEE Transactions on Automatic Control*, 54(8):1881–1886, 2009. cited By 10.

[CAP13] D. Casagrande, A. Astolfi, and T. Parisini. *Achieving Stability in Non-holonomic Systems by Means of Switched Control Laws*. 2013. cited By 0.

[CCDR+95] A. Caiti, G. Canepa, D. De Rossi, F. Germagnoli, G. Magenes, and T. Parisini. Towards the realization of an artificial tactile system: Fine-form discrimination by a tensorial tactile sensor array and neural inversion algorithms. *IEEE Transactions on Systems, Man, and Cybernetics*, 25(6):933–946, 1995. cited By 25.

[CDD+16] F. Chiaravalloti, L. D'Alfonso, G. D'Aquila, G. Fedele, T. Parisini, and G. Pin. Finite-time parameters estimation of the chua system. volume 1776, 2016. cited By 0.

[CDF+01a] A. Contin, S. D'Orlando, G. Fenu, R. Menis, S. Milo, and T. Parisini. Experiments on actuator fault diagnosis: The case of a nonlinearly controlled ac motor. pages 2747–2752, 2001. cited By 0.

[CDF+01b] A. Contin, S. DOrlando, G. Fenu, R. Menis, S. Milo, and T. Parisini. Fault detection on a real three-phase induction motor: Simulation and experimental results on residual generation. *Proceedings of the IEEE Conference on Decision and Control*, 1:167–172, 2001. cited By 2.

[CFL+03] R. Camus, G. Fenu, G. Longo, F. Pampanin, and T. Parisini. Identification of freeway-traffic dynamic models: A real case study. volume 6, pages 4579–4584, 2003. cited By 1.

[CFMP96] G. Casalino, A. Ferrara, R. Minciardi, and T. Parisini. Implicit model techniques and their application to lq adaptive control. *Control and Dynamic Systems*, 79(C):347–383, 1996. cited By 0.

[CFP96] A. Contin, G.F. Fenu, and T. Parisini. Diagnosis of hv stator bars insulation in the presence of multi partial-discharge phenomena. volume 2, pages 488–491, 1996. cited By 1.

[CHE+02] P.F. Culverhouse, V. Herry, R. Ellis, R. Williams, B. Reguera, S. Gonzlez-Gil, S.F. Umani, M. Cabrini, and T. Parisini. Dinoflagellate categorisation by artificial neural network. *Sea Technology*, 43(12):39–46, 2002. cited By 5.

[CLPP16] B. Chen, P. Li, G. Pin, and T. Parisini. Estimation of multisinusoidal signals: A deadbeat methodology. pages 3763–3768, 2016. cited By 0.

[CMDR+92] G. Canepa, M. Morabito, D. De Rossi, A. Caiti, and T. Parisini. Shape from touch by a neural net. volume 3, pages 2075–2080, 1992. cited By 12.

[CMP91] G. Casalino, R. Minciardi, and T. Parisini. Development of a new selftuning control algorithm for finite and infinite horizon quadratic adaptive optimization. *International Journal of Adaptive Control and Signal Processing*, 5(6):405–425, 1991. cited By 2.

[CP91a] A. Caiti and T. Parisini. Interpolation of ocean sediment properties by networks of parallel computational units. volume 3, pages 1695–1700, 1991. cited By 1.

[CP91b] A. Caiti and T. Parisini. Mapping of ocean sediments by networks of parallel interpolating units. pages 231–238, 1991. cited By 4.

[CP94] A. Caiti and T. Parisini. Mapping ocean sediments by rbf networks. *IEEE Journal of Oceanic Engineering*, 19(4):577–582, 1994. cited By 9.

[CP95] A. Caiti and T. Parisini. Approximation of inverse maps through rbf neural networks. volume 3, pages 1960–1963, 1995. cited By 0.

[CP10] F.A. Cuzzola and T. Parisini. A multivariable control scheme for a hot dip galvanising line process. pages 938–943, 2010. cited By 1.

[CPN+14] B. Chen, G. Pin, W.M. Ng, C.K. Lee, S.Y.R. Hui, and T. Parisini. An adaptive observer-based switched methodology for the identification of a perturbed sinusoidal signal: Theory and experiments. *IEEE Transactions on Signal Processing*, 62(24):6355–6365, 2014. cited By 6.

[CPN+15] B. Chen, G. Pin, W.M. Ng, S.Y.R. Hui, and T. Parisini. A parallel prefiltering approach for the identification of a biased sinusoidal signal: Theory and experiments. *International Journal of Adaptive Control and Signal Processing*, 29(12):1591–1608, 2015. cited By 6.

[CPN+17a] B. Chen, G. Pin, W.M. Ng, T. Parisini, and S.-Y.R. Hui. A fast-convergent modulation integral observer for online detection of the fundamental and harmonics in grid-connected power electronics systems. *IEEE Transactions on Power Electronics*, 32(4):2596–2607, 2017. cited By 1.

[CPN+17b] B. Chen, G. Pin, W.N. Ng, S.Y. Hui, and T. Parisini. An adaptive observer-based robust estimator of multi-sinusoidal signals. *IEEE Transactions on Automatic Control*, 2017. cited By 0; Article in Press.

[CPP13] B. Chen, G. Pin, and T. Parisini. Adaptive observer-based sinusoid identification: Structured and bounded unstructured measurement disturbances. pages 2645–2650, 2013. cited By 6.

[CPP14a] B. Chen, G. Pin, and T. Parisini. An adaptive observer-based estimator for multi-sinusoidal signals. pages 3450–3455, 2014. cited By 9.

[CPP14b] B. Chen, G. Pin, and T. Parisini. Robust parametric estimation of biased sinusoidal signals: A parallel pre-filtering approach. volume 2015-February, pages 1804–1809, 2014. cited By 4.

[CPP15] B. Chen, G. Pin, and T. Parisini. Frequency estimation of periodic signals: An adaptive observer approach. volume 2015-July, pages 2505–2510, 2015. cited By 0.

[CPP17] B. Chen, T. Parisini, and M.M. Polycarpou. A deadbeat estimator-based fault isolation scheme for nonlinear systems. pages 734–739, 2017. cited By 0.

[CPRZ94] A. Cattaneo, T. Parisini, R. Raiteri, and R. Zoppoli. Neural approximations for receding-horizon controllers. volume 2, pages 2144–2147, 1994. cited By 2.

[CSE+96] P.F. Culverhouse, R.G. Simpson, R. Ellis, J.A. Lindley, R. Williams, T. Parisini, B. Reguera, I. Bravo, R. Zoppoli, G. Earnshaw, H. McCall, and G. Smith. Automatic classification of field-collected dinoflagellates by artificial neural

network. *Marine Ecology Progress Series*, 139(1-3):281–287, 1996. cited By 52.

[CWS+06] P.F. Culverhouse, R. Williams, B. Simpson, C. Gallienne, B. Reguera, M. Cabrini, S. Fonda-Umani, T. Parisini, F.A. Pellegrino, Y. Pazos, H. Wang, L. Escalera, A. Moroo, M. Hensey, J. Silke, A. Pellegrini, D. Thomas, D. James, M.A. Longa, S. Kennedy, and G. Del Punta. Hab buoy: A new instrument for in situ monitoring and early warning of harmful algal bloom events. *African Journal of Marine Science*, 28(2):245–250, 2006. cited By 7.

[DRCM+93] D. De Rossi, G. Canepa, G. Magenes, F. Germagnoli, A. Caiti, and T. Parisini. Skin-like tactile sensor arrays for contact stress field extraction. *Materials Science and Engineering C*, 1(1):23–36, 1993. cited By 17.

[ESCP97] R. Ellis, R. Simpson, P.F. Culverhouse, and T. Parisini. Committees, collectives and individuals: Expert visual classification by neural network. *Neural Computing and Applications*, 5(2):99–105, 1997. cited By 10.

[FBP15] R.M.G. Ferrari, F. Boem, and T. Parisini. An algebraic approach to modeling distributed multiphysics problems: The case of a dri reactor. *IFAC-PapersOnLine*, 28(17):155–160, 2015. cited By 0.

[FCP08] R. Furlan, F.A. Cuzzola, and T. Parisini. Friction compensation in the interstand looper of hot strip mills: A sliding-mode control approach. *Control Engineering Practice*, 16(2):214–224, 2008. cited By 18.

[FDPP17] G. Fedele, L. D'Alfonso, G. Pin, and T. Parisini. Volterra's kernels-based finite-time parameters estimation of the chua system. *Applied Mathematics and Computation*, 2017. cited By 0; Article in Press.

[FGP99] G. Fenu, D. Gorinevsky, and T. Parisini. Nonparametric kernel smoothing and fir filtering for model-free fault symptom generation. volume 5, pages 4996–5001, 1999. cited By 1.

[FMP+08] E. Franco, L. Magni, T. Parisini, M.M. Polycarpou, and D.M. Raimondo. Cooperative constrained control of distributed agents with nonlinear dynamics and delayed information exchange: A stabilizing receding-horizon approach. *IEEE Transactions on Automatic Control*, 53(1):324–338, 2008. cited By 97.

[FOSPP06] E. Franco, R. Olfati-Saber, T. Parisini, and M.M. Polycarpou. Distributed fault diagnosis using sensor networks and consensus-based filters. pages 386–391, 2006. cited By 36.

[FP98] G. Fenu and T. Parisini. Model-free fault diagnosis for nonlinear systems: A combined kernel-regression and neural networks approach. volume 4, pages 2470–2471, 1998. cited By 1.

[FP99] G. Fenu and T. Parisini. Note on nonparametric kernel smoothing for model-free fault symptom generation. *Automatica*, 35(6):1175–1179, 1999. cited By 2.

[FP15] G. Fenu and T. Parisini. Nonparametric kernel smoothing for model-free fault symptom generation. pages 1619–1624, 2015. cited By 0.

[FPP04] E. Franco, T. Parisini, and M.M. Polycarpou. Cooperative control of discrete-time agents with delayed information exchange: A receding-horizon approach. volume 4, pages 4274–4279, 2004. cited By 20.

[FPP05a] E. Franco, T. Parisini, and M.M. Polycarpou. Cooperative control of distributed agents with nonlinear dynamics and delayed information exchange: A stabilizing receding-horizon approach. volume 2005, pages 2206–2211, 2005. cited By 18.

[FPP05b] E. Franco, T. Parisini, and M.M. Polycarpou. Stable receding-horizon cooperative control of a class of distributed agents. volume 7, pages 4673–4678, 2005. cited By 8.

[FPP06] R.M.G. Ferrari, T. Parisini, and M.M. Polycarpou. A fault detection scheme for distributed nonlinear uncertain systems. pages 2742–2747, 2006. cited By 6.

[FPP07a] R.M.G. Ferrari, T. Parisini, and M.M. Polycarpou. Distributed fault diagnosis with overlapping decompositions and consensus filters. pages 693–698, 2007. cited By 15.

[FPP07b] R.M.G. Ferrari, T. Parisini, and M.M. Polycarpou. A fault detection and isolation scheme for nonlinear uncertain discrete-time sytems. pages 1009–1014, 2007. cited By 16.

[FPP07c] E. Franco, T. Parisini, and M.M. Polycarpou. Design and stability analysis of cooperative receding-horizon control of linear discrete-time agents. *International Journal of Robust*

and Nonlinear Control, 17(10-11):982–1001, 2007. cited By 11.

[FPP08] R.M.G. Ferrari, T. Parisini, and M.M. Polycarpou. A robust fault detection and isolation scheme for a class of uncertain input-output discrete-time nonlinear systems. pages 2804–2809, 2008. cited By 13.

[FPP09] R.M.G. Ferrari, T. Parisini, and M.M. Polycarpou. Distributed fault diagnosis with overlapping decompositions: An adaptive approximation approach. *IEEE Transactions on Automatic Control*, 54(4):794–799, 2009. cited By 62.

[FPP10] R.M.G. Ferrari, T. Parisini, and M.M. Polycarpou. Distributed fault diagnosis of large-scale discrete-time nonlinear systems: New results on the isolation problem. pages 1619–1626, 2010. cited By 9.

[FPP12] R.M.G. Ferrari, T. Parisini, and M.M. Polycarpou. Distributed fault detection and isolation of large-scale discrete-time nonlinear systems: An adaptive approximation approach. *IEEE Transactions on Automatic Control*, 57(2):275–290, 2012. cited By 89.

[FPP13] R.M.G. Ferrari, T. Parisini, and M.M. Polycarpou. An algebraic approach for robust fault detection of input-output elastodynamic distributed parameter systems. pages 2445–2452, 2013. cited By 1.

[FPSZ91] G. Frisiani, T. Parisini, L. Siccardi, and R. Zoppoli. Team theory and back-propagation for dynamic routing in communication networks. pages 325–334, 1991. cited By 3.

[FPSZ01] A.D. Febbraro, T. Parisini, S. Sacone, and R. Zoppoli. Neural approximations for feedback optimal control of freeway systems. *IEEE Transactions on Vehicular Technology*, 50(1):302–303, 2001. cited By 36.

[FSP04a] E. Franco, S. Sacone, and T. Parisini. Practically stable nonlinear receding-horizon control of multi-model systems. volume 3, pages 3241–3246, 2004. cited By 10.

[FSP04b] E. Franco, S. Sacone, and T. Parisini. Stable multi-model switching control of a class of nonlinear systems. volume 2, pages 1873–1878, 2004. cited By 10.

[GGP+12] M. Gaggero, G. Gnecco, T. Parisini, M. Sanguineti, and R. Zoppoli. Approximation structures with moderate complexity in functional optimization and dynamic programming. pages 1902–1908, 2012. cited By 0.

[GPR95] G. Guglielmi, T. Parisini, and G. Rossi. Keynote paper: Fault diagnosis and neural networks: A power plant application. *Control Engineering Practice*, 3(5):601–620, 1995. cited By 37.

[KMP02] J. Korbicz, M. Mrugalski, and T. Parisini. Designing state-space models with neural networks. volume 15, pages 459–464, 2002. cited By 0.

[KPP13a] C. Keliris, M.M. Polycarpou, and T. Parisini. A distributed fault detection filtering approach for a class of interconnected continuous-time nonlinear systems. *IEEE Transactions on Automatic Control*, 58(8):2032–2047, 2013. cited By 37.

[KPP13b] C. Keliris, M.M. Polycarpou, and T. Parisini. A distributed fault detection filtering approach for a class of interconnected input-output nonlinear systems. pages 422–427, 2013. cited By 5.

[KPP14] C. Keliris, M.M. Polycarpou, and T. Parisini. A distributed fault diagnosis approach utilizing adaptive approximation for a class of interconnected continuous-time nonlinear systems. volume 2015-February, pages 6536–6541, 2014. cited By 1.

[KPP15a] C. Keliris, M.M. Polycarpou, and T. Parisini. Distributed fault diagnosis for process and sensor faults in a class of interconnected input-output nonlinear discrete-time systems. *International Journal of Control*, 88(8):1472–1489, 2015. cited By 4.

[KPP15b] C. Keliris, M.M. Polycarpou, and T. Parisini. A robust nonlinear observer-based approach for distributed fault detection of input-output interconnected systems. *Automatica*, 53:408–415, 2015. cited By 20.

[KPP17] C. Keliris, M.M. Polycarpou, and T. Parisini. An integrated learning and filtering approach for fault diagnosis of a class of nonlinear dynamical systems. *IEEE Transactions on Neural Networks and Learning Systems*, 28(4):988–1004, 2017. cited By 0.

[KZC+15] M. Khalili, X. Zhang, Y. Cao, M.M. Polycarpou, and T. Parisini. Distributed adaptive fault-tolerant control of nonlinear uncertain second-order multi-agent systems. volume 54rd IEEE Conference on Decision and Control,CDC 2015, pages 4480–4485, 2015. cited By 2.

[KZP+15] M. Khalili, X. Zhang, M. Polycarpou, T. Parisini, and Y. Cao. Distributed adaptive fault-tolerant control of uncertain multi-agent systems. *IFAC-PapersOnLine*, 28(21):66–71, 2015. cited By 7.

[LFPP17] P. Li, G. Fedele, G. Pin, and T. Parisini. Kernel-based deadbeat parametric estimation of bias-affected damped sinusoidal signals. pages 519–524, 2017. cited By 0.

[LHP+07] F.L. Lewis, J. Huang, T. Parisini, D.V. Prokhorov, and D.C. Wunsch. Guest editorial: Special issue on neural networks for feedback control systems. *IEEE Transactions on Neural Networks*, 18(4):969–972, 2007. cited By 12.

[LP98a] F.L. Lewis and T. Parisini. Guest editorial: Neural network feedback control with guaranteed stability. *International Journal of Control*, 70(3):337–339, 1998. cited By 22.

[LP98b] F.L. Lewis and Th. Parisini. New developments in neurocontrol. volume 1, pages 86–91, 1998. cited By 1.

[LPPF16] P. Li, G. Pin, T. Parisini, and G. Fedele. Deadbeat source localization from range-only measurements: A robust kernel-based approach. volume 2016-July, pages 2729–2734, 2016. cited By 0.

[LPV01] M. Lovera, T. Parisini, and M. Verhaegen. Fault detection: A subspace identification approach. volume 3, pages 2275–2276, 2001. cited By 9.

[MP96] Piergiulio Maryni and Thomas Parisini. Optimal control for dynamic bandwidth allocation in communication networks: a neural approach. pages 145–150, 1996. cited By 0.

[PALP12] G. Pin, A. Assalone, M. Lovera, and T. Parisini. Kernel-based non-asymptotic parameter estimation of continuous-time systems. pages 2832–2839, 2012. cited By 4.

[PALP16] G. Pin, A. Assalone, M. Lovera, and T. Parisini. Non-asymptotic kernel-based parametric estimation of continuous-time linear systems. *IEEE Transactions on Automatic Control*, 61(2):360–373, 2016. cited By 6.

[PAMZ97] T. Parisini, A. Alessandri, M. Maggiore, and R. Zoppoli. On convergence of neural approximate nonlinear state estimators. volume 3, pages 1819–1822, 1997. cited By 4.

[Par97] T. Parisini. Physically accurate nonlinear models for fault detection and diagnosis: The case of a power plant z.ast. *Journal of Process Control*, 7(2):97–109, 1997. cited By 5.

[Par08] T. Parisini. Report from the cdc program chair. page 5, 2008. cited By 0.

[Par10] T. Parisini. Editorial control systems technology: Towards a systems-of-systems perspective? *IEEE Transactions on Control Systems Technology*, 18(2):249–250, 2010. cited By 2.

[Par11] T. Parisini. Ieee transactions on control systems technology: Editorial. *IEEE Transactions on Control Systems Technology*, 19(2):245–246, 2011. cited By 0.

[Par12a] T. Parisini. 2012 ieee transactions on control systems technology outstanding paper award. *IEEE Transactions on Control Systems Technology*, 2012. cited By 0; Article in Press.

[Par12b] T. Parisini. Editorial. *IEEE Transactions on Control Systems Technology*, 20(2):289–290, 2012. cited By 0.

[Par13a] T. Parisini. 2012 ieee transactions on control systems technology outstanding paper award. *IEEE Transactions on Control Systems Technology*, 2013. cited By 0; Article in Press.

[Par13b] T. Parisini. Editorial. *IEEE Transactions on Control Systems Technology*, 21(2):281–282, 2013. cited By 0.

[Par14] T. Parisini. Editorial. *IEEE Transactions on Control Systems Technology*, 22(3):825–826, 2014. cited By 0.

[Par15] T. Parisini. Ieee transactions on control systems technology: Editorial. *IEEE Transactions on Control Systems Technology*, 23(2):413–414, 2015. cited By 0.

[Par16] T. Parisini. Editorial. *IEEE Transactions on Control Systems Technology*, 24(2):381–382, 2016. cited By 0.

[Par17] T. Parisini. Editorial. *IEEE Transactions on Control Systems Technology*, 25(1):1–2, 2017. cited By 0.

[PCP13] G. Pin, B. Chen, and T. Parisini. A nonlinear adaptive observer with excitation-based switching. pages 4391–4398, 2013. cited By 4.

[PCP15a] G. Pin, B. Chen, and T. Parisini. Deadbeat kernel-based frequency estimation of a biased sinusoidal signal. pages 479–484, 2015. cited By 3.

[PCP15b] G. Pin, B. Chen, and T. Parisini. The modulation integral observer for linear continuous-time systems. pages 2932–2939, 2015. cited By 2.

[PCP17] G. Pin, B. Chen, and T. Parisini. Robust finite-time estimation of biased sinusoidal signals: A volterra operators approach. *Automatica*, 77:120–132, 2017. cited By 1.

[PCPB14] G. Pin, B. Chen, T. Parisini, and M. Bodson. Robust sinusoid identification with structured and unstructured measurement uncertainties. *IEEE Transactions on Automatic Control*, 59(6):1588–1593, 2014. cited By 15.

[PFC+11] G. Pin, V. Francesconi, F.A. Cuzzola, S. Martinis, and T. Parisini. Adaptive task-space control of strip flatness in multiroll mill stands. volume 18, pages 11720–11725, 2011. cited By 2.

[PFCP13] G. Pin, V. Francesconi, F.A. Cuzzola, and T. Parisini. Adaptive task-space metal strip-flatness control in cold multi-roll mill stands. *Journal of Process Control*, 23(2):108–119, 2013. cited By 6.

[PFP09] G. Pin, M. Filippo, and T. Parisini. Networked mpc for constrained linear systems: A recursive feasibility approach. pages 555–560, 2009. cited By 6.

[PFP10a] G. Pin, M. Filippo, and T. Parisini. A coordinated nonlinear model predictive control scheme over non-acknowledged networks. pages 563–568, 2010. cited By 0.

[PFP+10b] G. Pin, M. Filippo, F.A. Pellegrino, G. Fenu, and T. Parisini. Approximate off-line receding horizon control of constrained nonlinear discrete-time systems: Smooth approximation of the control law. pages 6268–6273, 2010. cited By 3.

[PFP+13] G. Pin, M. Filippo, F.A. Pellegrino, G. Fenu, and T. Parisini. Approximate model predictive control laws for constrained nonlinear discrete-time systems: Analysis and offline design. *International Journal of Control*, 86(5):804–820, 2013. cited By 5.

[PFPP14] G. Pin, M. Filippo, F.A. Pellegrino, and T. Parisini. Approximate off-line receding horizon control of constrained nonlinear discrete-time systems. pages 2420–2425, 2014. cited By 6.

[PJP+05] A.G. Parlos, C. Ji, T. Parisini, M. Baglietto, A.F. Atiya, and K. Claffy. Guest editorial: Introduction to the special issue on adaptive learning systems in communication networks. *IEEE Transactions on Neural Networks*, 16(5):1013–1018, 2005. cited By 1.

[PKGCP14] G. Pin, M. Karimi-Ghartemani, B. Chen, and T. Parisini. Sinusoidal signal estimation from a noisy-biased measurement by an enhanced pll with generalized error filtering. volume 2015-February, pages 4071–4076, 2014. cited By 3.

[PLAP13] G. Pin, M. Lovera, A. Assalone, and T. Parisini. Kernel-based non-asymptotic state estimation for linear continuous-time systems. pages 3123–3128, 2013. cited By 8.

[PMPR08] G. Pin, L. Magni, T. Parisini, and D.M. Raimondo. Robust receding - horizon control of nonlinear systems with state dependent uncertainties: An input-to-state stability approach. pages 1667–1672, 2008. cited By 10.

[PP01] F. Previdi and T. Parisini. Model-free fault detection: A spectral estimation approach based on coherency functions. *International Journal of Control*, 74(11):1107–1117, 2001. cited By 2.

[PP02a] K. Patan and T. Parisini. Stochastic approaches to dynamic neural network training. actuator fault diagnosis study. volume 15, pages 53–58, 2002. cited By 3.

[PP02b] K. Patan and T. Parisini. Stochastic learning methods for dynamic neural networks: Simulated and real-data comparisons. *Proceedings of the American Control Conference*, 4:2577–2582, 2002. cited By 14.

[PP05] K. Patan and T. Parisini. Identification of neural dynamic models for fault detection and isolation: The case of a real sugar evaporation process. *Journal of Process Control*, 15(1):67–79, 2005. cited By 59.

[PP06] F. Previdi and T. Parisini. Model-free actuator fault detection using a spectral estimation approach: The case of the damadics benchmark problem. *Control Engineering Practice*, 14(6 SPEC. ISS.):635–644, 2006. cited By 20.

[PP08] G. Pin and T. Parisini. Set invariance under controlled nonlinear dynamics with application to robust rh control. pages 4073–4078, 2008. cited By 3.

[PP09a] G. Pin and T. Parisini. Networked predictive control of constrained nonlinear systems: recursive feasibility and input-to-state stability analysis. pages 2327–2334, 2009. cited By 7.

[PP09b] G. Pin and T. Parisini. Stabilization ofnetworked control systems by nonlinear model predictive control: A set invariance approach. *Lecture Notes in Control and Information Sciences*, 384:195–204, 2009. cited By 12.

[PP10] G. Pin and T. Parisini. Extended recursively feasible model predictive control by two-stage online optimization. pages 5483–5488, 2010. cited By 2.

[PP11a] G. Pin and T. Parisini. A direct adaptive method for discriminating sinusoidal components with nearby frequencies. pages 2994–2999, 2011. cited By 3.

[PP11b] G. Pin and T. Parisini. Networked predictive control of uncertain constrained nonlinear systems: Recursive feasibility and input-to-state stability analysis. *IEEE Transactions on Automatic Control*, 56(1):72–87, 2011. cited By 83.

[PP11c] G. Pin and T. Parisini. Robust minimum-time constrained control of nonlinear discrete-time systems: New results. pages 1710–1715, 2011. cited By 0.

[PP14] G. Pin and T. Parisini. On the robustness of nominal nonlinear minimum-time control and extension to non-robustly controllable target sets. *IEEE Transactions on Automatic Control*, 59(4):863–875, 2014. cited By 1.

[PPB11] G. Pin, T. Parisini, and M. Bodson. Robust parametric identification of sinusoidal signals: An input-to-state stability approach. pages 6104–6109, 2011. cited By 12.

[PPSV97] T. Parisini, M. Polycarpou, M. Sanguineti, and A. Vemuri. Robust parametric and non-parametric fault diagnosis in nonlinear input-output systems. volume 5, pages 4481–4482, 1997. cited By 4.

[PRMP09] G. Pin, D.M. Raimondo, L. Magni, and T. Parisini. Robust model predictive control of nonlinear systems with bounded and state-dependent uncertainties. *IEEE Transactions on Automatic Control*, 54(7):1681–1687, 2009. cited By 46.

[PRP07] A. Papadimitropoulos, G.A. Rovithakis, and T. Parisini. Fault detection in mechanical systems with friction phenomena: An online neural approximation approach. *IEEE Transactions on Neural Networks*, 18(4):1067–1082, 2007. cited By 19.

[PS97] T. Parisini and S. Sacone. Stable two-level hybrid controller for nonlinear discrete-time systems. volume 2, pages 1234–1236, 1997. cited By 1.

[PS98] T. Parisini and S. Sacone. Fault diagnosis and controller reconfiguration: An hybrid approach. pages 163–168, 1998. cited By 16.

[PS99a] T. Parisini and S. Sacone. A hybrid receding-horizon control scheme for nonlinear discrete-time systems. *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 1567:262–277, 1999. cited By 3.

[PS99b] T. Parisini and S. Sacone. A hybrid receding-horizon control scheme for nonlinear systems. *Systems and Control Letters*, 38(3):187–196, 1999. cited By 11.

[PS00a] T. Parisini and S. Sacone. Hybrid control based on discrete-event automata and receding-horizon neural controllers. pages 303–308, 2000. cited By 2.

[PS00b] T. Parisini and S. Sacone. Hybrid control based on discrete-event automata and receding-horizon neural controllers. *Proceedings of the IEEE Conference on Decision and Control*, 1:510–515, 2000. cited By 1.

[PS01] T. Parisini and S. Sacone. Stable hybrid control based on discrete-event automata and receding-horizon neural regulators. *Automatica*, 37(8):1279–1292, 2001. cited By 18.

[PS15] T. Parisini and S. Sacone. Hybrid receding-horizon control: Formulation and stability analysis. pages 955–960, 2015. cited By 0.

[PSP03] F. Previdi, S. Sacone, and T. Parisini. A receding-horizon multiple model based control scheme for nonlinear systems. volume 2, pages 1431–1432, 2003. cited By 1.

[PSZ95] T. Parisini, M. Sanguineti, and R. Zoppoli. Nonlinear stabilization by receding-horizon neural regulators. volume 3, pages 2433–2441, 1995. cited By 2.

[PSZ98] T. Parisini, M. Sanguineti, and R. Zoppoli. Nonlinear stabilization by receding-horizon neural regulators. *International Journal of Control*, 70(3):341–362, 1998. cited By 50.

[PT13] T. Parisini and R. Tempo. 52nd ieee conference on decision and control in florence, italy. *IEEE Control Systems*, 33(3):85–89, 2013. cited By 0.

[PT14] T. Parisini and R. Tempo. 52nd ieee conference on decision and control. *IEEE Control Systems*, 34(3):93–105, 2014. cited By 0.

[PWCP15] G. Pin, Y. Wang, B. Chen, and T. Parisini. Semi-global direct estimation of multiple frequencies with an adaptive observer having minimal parameterization. volume 54rd IEEE Conference on Decision and Control,CDC 2015, pages 3693–3698, 2015. cited By 2.

[PZ91] T. Parisini and R. Zoppoli. Backpropagation for n-stage optimal control problems. pages 1518–1529, 1991. cited By 5.

[PZ92] T. Parisini and R. Zoppoli. Multi-layer neural networks for the solution of generalized nonlinear terminal control problems. pages 174–179, 1992. cited By 2.

[PZ93] T. Parisini and R. Zoppoli. Radial basis functions and multilayer feedforward neural networks for optimal control of nonlinear stochastic systems. pages 1853–1858, 1993. cited By 3.

[PZ94a] T. Parisini and R. Zoppoli. Neural approximations for multistage optimal control of nonlinear stochastic systems. volume 2, pages 1373–1378, 1994. cited By 0.

[PZ94b] T. Parisini and R. Zoppoli. Neural networks for feedback feedforward nonlinear control systems. *IEEE Transactions on Neural Networks*, 5(3):436–449, 1994. cited By 55.

[PZ94c] T. Parisini and R. Zoppoli. Neural networks for nonlinear state estimation. *International Journal of Robust and Nonlinear Control*, 4(2):231–248, 1994. cited By 19.

[PZ94d] T. Parisini and R. Zoppoli. Neural optimal control of nonlinear stochastic systems. volume 4, pages 2383–2388, 1994. cited By 0.

[PZ94e] T. Parisini and R. Zoppoli. Team theory and neural networks for dynamic routing in traffic and communication networks.

Information and decision technologies Amsterdam, 19(1):1–18, 1994. cited By 5.

[PZ95] T. Parisini and R. Zoppoli. A receding-horizon regulator for nonlinear systems and a neural approximation. *Automatica*, 31(10):1443–1451, 1995. cited By 150.

[PZ96a] T. Parisini and R. Zoppoli. Infinite-horizon optimal control of nonlinear stochastic systems: a neural approach. volume 3, pages 2355–3592, 1996. cited By 0.

[PZ96b] T. Parisini and R. Zoppoli. Neural approximations for multistage optimal control of nonlinear stochastic systems. *IEEE Transactions on Automatic Control*, 41(6):889–895, 1996. cited By 25.

[PZ98] T. Parisini and R. Zoppoli. Neural approximations for infinite-horizon optimal control of nonlinear stochastic systems. *IEEE Transactions on Neural Networks*, 9(6):1388–1408, 1998. cited By 34.

[RBFTP14] S. Riverso, F. Boem, G. Ferrari-Trecate, and T. Parisini. Fault diagnosis and control-reconfiguration in large-scale systems: A plug-and-play approach. volume 2015-February, pages 4977–4982, 2014. cited By 12.

[RBFTP16] S. Riverso, F. Boem, G. Ferrari-Trecate, and T. Parisini. Plug-and-play fault detection and control-reconfiguration for a class of nonlinear large-scale constrained systems. *IEEE Transactions on Automatic Control*, 61(12):3963–3978, 2016. cited By 3.

[RBGP16] D.M. Raimondo, F. Boem, A. Gallo, and T. Parisini. A decentralized fault-tolerant control scheme based on active fault diagnosis. pages 2164–2169, 2016. cited By 0.

[SBP07] L. Scardovi, M. Baglietto, and T. Parisini. Active state estimation for nonlinear systems: A neural approximation approach. *IEEE Transactions on Neural Networks*, 18(4):1172–1184, 2007. cited By 13.

[SFP05] S. Sacone, E. Franco, and T. Parisini. A hybrid control scheme for freeway systems. volume 16, pages 108–113, 2005. cited By 1.

[SPP06] R.R. Selmic, M.M. Polycarpou, and T. Parisini. Actuator fault detection in nonlinear uncertain systems using neural on-line

approximation models. volume 2006, pages 5123–5128, 2006. cited By 6.

[SPP09] R.R. Selmic, M.M. Polycarpou, and T. Parisini. Actuator fault detection in nonlinear uncertain systems using neural on-line approximation models. *European Journal of Control*, 15(1):29–44, 2009. cited By 10.

[SPP15] R.R. Selmic, M.M. Polycarpou, and T. Parisini. Output feedback actuator fault detection in nonlinear systems using neural networks. pages 3232–3239, 2015. cited By 1.

[WPSP16] Y. Wang, G. Pin, A. Serrani, and T. Parisini. Removing spr-like conditions in adaptive feedforward control of uncertain systems. pages 4728–4733, 2016. cited By 0.

[YLL+16] J. Yin, D. Lin, C.K. Lee, T. Parisini, and S.Y.R. Hui. Front-end monitoring of multiple loads in wireless power transfer systems without wireless communication systems. *IEEE Transactions on Power Electronics*, 31(3):2510–2517, 2016. cited By 6.

[YLPRH16] J. Yin, D. Lin, T. Parisini, and S.Y. Ron Hui. Front-end monitoring of the mutual inductance and load resistance in a series-series compensated wireless power transfer system. *IEEE Transactions on Power Electronics*, 31(10):7339–7352, 2016. cited By 2.

[ZBFP17] Y. Zhou, F. Boem, C. Fischione, and T. Parisini. Distributed fault detection with sensor networks using pareto-optimal dynamic estimation method. pages 728–733, 2017. cited By 1.

[ZBP17] Y. Zhou, F. Boem, and T. Parisini. Partition-based pareto-optimal state prediction method for interconnected systems using sensor networks. pages 1886–1891, 2017. cited By 0.

[ZPP99] Xiaodong Zhang, Thomas Parisini, and Marios Polycarpou. Robust parametric fault detection and isolation for nonlinear systems. volume 3, pages 3102–3107, 1999. cited By 16.

[ZPP00] Xiaodong Zhang, Marios Polycarpou, and Thomas Parisini. Abrupt and incipient fault isolation of nonlinear uncertain systems. volume 6, pages 3713–3717, 2000. cited By 12.

[ZPP01a] X. Zhang, M. Polycarpou, and T. Parisini. Fault isolation in a class of nonlinear uncertain input-output systems. volume 2, pages 1741–1746, 2001. cited By 6.

[ZPP01b] X. Zhang, M. Polycarpou, and T. Parisini. Robust fault isolation for a class of non-linear input-output systems. *International Journal of Control*, 74(13):1295–1310, 2001. cited By 50.

[ZPP01c] X. Zhang, M.M. Polycarpou, and T. Parisini. Integrated design of fault diagnosis and accommodation schemes for a class of nonlinear systems. volume 2, pages 1448–1453, 2001. cited By 26.

[ZPP02a] X. Zhang, M.M. Polycarpou, and T. Parisini. Fault-tolerant control of a class of nonlinear systems. volume 15, pages 263–268, 2002. cited By 1.

[ZPP02b] X. Zhang, M.M. Polycarpou, and T. Parisini. A robust detection and isolation scheme for abrupt and incipient faults in nonlinear systems. *IEEE Transactions on Automatic Control*, 47(4):576–593, 2002. cited By 377.

[ZPP04] X. Zhang, T. Parisini, and M.M. Polycarpou. Adaptive fault-tolerant control of nonlinear uncertain systems: An information-based diagnostic approach. *IEEE Transactions on Automatic Control*, 49(8):1259–1274, 2004. cited By 338.

[ZPP05] X. Zhang, T. Parisini, and M.M. Polycarpou. Sensor bias fault isolation in a class of nonlinear systems. *IEEE Transactions on Automatic Control*, 50(3):370–376, 2005. cited By 108.

[ZPP06] X. Zhang, M.M. Polycarpou, and T. Parisini. Erratum: Robust fault isolation for a class of nonlinear input-output systems (international journal of control (2001) 74:13 (1295-1310)). *International Journal of Control*, 79(7):830, 2006. cited By 0.

[ZPP08a] X. Zhang, M.M. Polycarpou, and T. Parisini. Adaptive fault-tolerant control of a class of nonlinear mimo systems. pages 398–403, 2008. cited By 7.

[ZPP08b] X. Zhang, M.M. Polycarpou, and T. Parisini. Design and analysis of a fault isolation scheme for a class of uncertain nonlinear systems. *Annual Reviews in Control*, 32(1):107–121, 2008. cited By 49.

[ZPP08c] X. Zhang, M.M. Polycarpou, and T. Parisini. Isolation of process and sensor faults for a class of nonlinear uncertain systems. pages 4298–4303, 2008. cited By 1.

[ZPP09a] X. Zhang, M.M. Polycarpou, and T. Parisini. Decentralized fault detection in a class of large-scale nonlinear uncertain systems. pages 6988–6993, 2009. cited By 15.

[ZPP09b] X. Zhang, M.M. Polycarpou, and T. Parisini. Fault diagnosis of a class of uncertain nonlinear systems with lipschitz nonlinearities. pages 12–17, 2009. cited By 3.

[ZPP10a] X. Zhang, M.M. Polycarpou, and T. Parisini. Adaptive fault diagnosis and fault-tolerant control of mimo nonlinear uncertain systems. *International Journal of Control*, 83(5):1054–1080, 2010. cited By 20.

[ZPP10b] X. Zhang, M.M. Polycarpou, and T. Parisini. Fault diagnosis of a class of nonlinear uncertain systems with lipschitz nonlinearities using adaptive estimation. *Automatica*, 46(2):290–299, 2010. cited By 194.

[ZPP15] Y. Zhou, T. Parisini, and M.M. Polycarpou. Detection of drift sensor faults in a class of nonlinear uncertain systems. volume 54rd IEEE Conference on Decision and Control,CDC 2015, pages 3169–3174, 2015. cited By 0.

[ZPS96] R. Zoppoli, T. Parisini, and M. Sanguineti. Neural approximators for functional optimization. volume 3, pages 2355–3592, 1996. cited By 1.

[ZSP01] R. Zoppoli, M. Sanguineti, and T. Parisini. Can we cope with the curse of dimensionality in optimal control by using neural approximators? volume 4, pages 3540–3545, 2001. cited By 2.

[ZSP02] R. Zoppoli, M. Sanguineti, and T. Parisini. Approximating networks and extended ritz method for the solution of functional optimization problems. *Journal of Optimization Theory and Applications*, 112(2):403–440, 2002. cited By 95.

[ZZPP14] Q. Zhang, X. Zhang, M.M. Polycarpou, and T. Parisini. Distributed sensor fault detection and isolation for multimachine power systems. *International Journal of Robust and Nonlinear Control*, 24(8-9):1403–1430, 2014. cited By 7.

[ZZZ+11] X. Zhang, Q. Zhang, S. Zhao, R. Ferrari, M.M. Polycarpou, and T. Parisini. Fault detection and isolation of the wind turbine benchmark: An estimation-based approach. volume 18, pages 8295–8300, 2011. cited By 36.

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AALBORG UNIVERSITET

Fakultetskontoret for ENGINEERING, SUND og TECH

Dokument dato: 28-11-17

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Sagsnr.:

Sagsfremstilling til møder

Overskrift og varighed:	Godkendelse af mødekalender for akademisk råd 2018
Sagsbehandler:	Mark Gammeljord
Sagsfremstilling:	Akademisk råd bedes godkende mødekalenderen for 2018. af bilag 1 og bilag 2 fremgår mødekalenderen for akademisk råd 2018 samt procesplan for skriftlige hørringer 2018.
Indstilling:	Det indstilles, at akademisk råd godkender mødekalenderen for 2018 samt procesplanen for skriftlige hørringer 2018
Bilag:	Bilag 1: mødekalender akademisk råd 2018 Bilag 2: procesplan for skriftlige hørringer 2018
Beslutning:	

Akademisk Råd TECH møder

2018

Februar	Marts	April	Maj	Juni	Juli
To 1	To 1	Sø 1 Påskedag	Ti 1	Fr 1	Sø 1
Fr 2	Fr 2 ○	Ma 2 2. påskedag 14	On 2	Lø 2	Ma 2 27
Lø 3	Lø 3	Ti 3	To 3	Sø 3	Ti 3
Sø 4	Sø 4	On 4	Fr 4	Ma 4 23	On 4
Ma 5 6	Ma 5 10	To 5	Lø 5	Ti 5	To 5
Ti 6	Ti 6	Fr 6	Sø 6	On 6 ◑	Fr 6 ◑
On 7 ◑	On 7	Lø 7	Ma 7 19	To 7	Lø 7
To 8	To 8	Sø 8	Ti 8 ◑	Fr 8	Sø 8
Fr 9	Fr 9 ◑	Ma 9 15	On 9 AR møde TECH	Lø 9	Ma 9 28
Lø 10	Lø 10	Ti 10	To 10 Kr. himmelfartsdag	Sø 10	Ti 10
Sø 11	Sø 11	On 11	Fr 11	Ma 11 24	On 11
Ma 12 7	Ma 12 11	To 12	Lø 12	Ti 12	To 12
Ti 13	Ti 13	Fr 13	Sø 13	On 13 ●	Fr 13 ●
On 14	On 14	Lø 14	Ma 14 20	To 14	Lø 14
To 15 ●	To 15	Sø 15	Ti 15 ●	Fr 15	Sø 15
Fr 16	Fr 16	Ma 16 ● 16	On 16	Lø 16	Ma 16 29
Lø 17	Lø 17 ●	Ti 17	To 17	Sø 17	Ti 17
Sø 18	Sø 18	On 18	Fr 18	Ma 18 25	On 18
Ma 19 8	Ma 19 12	To 19	Lø 19	Ti 19	To 19 ◐
Ti 20	Ti 20	Fr 20	Sø 20 Pinsedag	On 20 ◐ AR møde TECH	Fr 20
On 21	On 21 AR møde TECH	Lø 21	Ma 21 2. pinsedag 21	To 21	Lø 21
To 22	To 22	Sø 22	Ti 22 ◐	Fr 22	Sø 22
Fr 23 ◐	Fr 23	Ma 23 17	On 23	Lø 23	Ma 23 30
Lø 24	Lø 24 ◐	Ti 24	To 24	Sø 24	Ti 24
Sø 25	Sø 25 Palmesøndag	On 25	Fr 25	Ma 25 26	On 25
Ma 26 9	Ma 26 13	To 26	Lø 26	Ti 26	To 26
Ti 27	Ti 27	Fr 27 Bededag	Sø 27	On 27	Fr 27 ○
On 28	On 28	Lø 28	Ma 28 22	To 28 ○	Lø 28
	To 29 Skærtorsdag	Sø 29	Ti 29 ○	Fr 29	Sø 29
	Fr 30 Langfredag	Ma 30 ◇ 18	On 30	Lø 30	Ma 30 31
	Lø 31 ○		To 31		Ti 31
20 arbejdsdage ekskl. 4 lørdage	20 arbejdsdage ekskl. 5 lørdage	19 arbejdsdage ekskl. 4 lørdage	21 arbejdsdage ekskl. 4 lørdage	21 arbejdsdage ekskl. 5 lørdage	22 arbejdsdage ekskl. 4 lørdage

Akademisk Råd TECH møder

18/19

August		September		Oktober		November		December		Januar	
On 1		Lø 1		Ma 1	40	To 1		Lø 1		Ti 1	Nytårsdag
To 2		Sø 2		Ti 2 ◑		Fr 2		Sø 2		On 2	
Fr 3		Ma 3 ◑	36	On 3		Lø 3		Ma 3	49	To 3	
Lø 4 ◑		Ti 4		To 4		Sø 4		Ti 4		Fr 4	
Sø 5		On 5	AR møde TECH	Fr 5		Ma 5	45	On 5		Lø 5	
Ma 6	32	To 6		Lø 6		Ti 6		To 6		Sø 6	
Ti 7		Fr 7		Sø 7		On 7 ●		Fr 7 ●		Ma 7	2
On 8		Lø 8		Ma 8	41	To 8		Lø 8		Ti 8	
To 9		Sø 9		Ti 9 ●		Fr 9		Sø 9		On 9	AR møde TECH
Fr 10		Ma 10	37	On 10	AR møde TECH	Lø 10		Ma 10	50	To 10	
Lø 11 ●		Ti 11		To 11		Sø 11		Ti 11		Fr 11	
Sø 12		On 12		Fr 12		Ma 12	46	On 12		Lø 12	
Ma 13	33	To 13		Lø 13		Ti 13		To 13	AR X-møde TECH	Sø 13	
Ti 14		Fr 14		Sø 14		On 14		Fr 14		Ma 14 ◐	3
On 15		Lø 15		Ma 15	42	To 15 ◐		Lø 15 ◐		Ti 15	
To 16		Sø 16		Ti 16 ◐		Fr 16		Sø 16		On 16	
Fr 17		Ma 17 ◐	38	On 17		Lø 17		Ma 17	51	To 17	
Lø 18 ◐		Ti 18		To 18		Sø 18		Ti 18		Fr 18	
Sø 19		On 19		Fr 19		Ma 19	47	On 19		Lø 19	
Ma 20	34	To 20		Lø 20		Ti 20		To 20		Sø 20	
Ti 21		Fr 21		Sø 21		On 21		Fr 21		Ma 21 ○	4
On 22		Lø 22		Ma 22	43	To 22		Lø 22 ○		Ti 22	
To 23		Sø 23		Ti 23		Fr 23 ○		Sø 23		On 23	
Fr 24		Ma 24	39	On 24 ○		Lø 24		Ma 24	52	To 24	
Lø 25		Ti 25 ○		To 25		Sø 25		Ti 25	Juledag	Fr 25	
Sø 26		On 26		Fr 26		Ma 26	48	On 26	2. juledag	Lø 26	
Ma 27	35	To 27		Lø 27		Ti 27		To 27		Sø 27	
Ti 28		Fr 28		Sø 28		On 28	AR møde TECH	Fr 28		Ma 28	5
On 29		Lø 29		Ma 29	44	To 29		Lø 29 ◑		Ti 29	
To 30		Sø 30		Ti 30		Fr 30 ◑		Sø 30		On 30	
Fr 31				On 31 ◑				Ma 31	1	To 31	
23 arbejdsdage ekskl. 4 lørdage		20 arbejdsdage ekskl. 5 lørdage		23 arbejdsdage ekskl. 4 lørdage		22 arbejdsdage ekskl. 4 lørdage		19 arbejdsdage ekskl. 5 lørdage		22 arbejdsdage ekskl. 4 lørdage	

AALBORG UNIVERSITET

Det Tekniske Fakultet for IT og Design
Niels Jernes Vej 10
9220 Aalborg

Dato: 27-11-2017

Procesplan for skriftlig høring i Akademisk Råd, TECH

Nedsættelse af bedømmelsesudvalg ved skriftlig høring sker med jævne mellemrum mellem de ordinære møder i Akademisk Råd. Den anden onsdag i august måned er der sommerprocedure, hvor der også medtages godkendelse af Ph.d. grader.

Plan for skriftlig høring ved Akademisk Råd TECH 2018

Punkter sendes i høring	**Frist for tilbagemelding fra AR**
Mandag 5. februar	Onsdag 7. februar
Mandag 9. april	Onsdag 11. april
Mandag 28. maj	Onsdag 30. maj
Mandag 2. juli	Onsdag 4. juli
Sommerprocedure Onsdag 8. august	Onsdag 15. august
Mandag 24. september	Onsdag 26. september
Mandag 5. november	Onsdag 7. november

Skriftlige høringer vedr. indstillinger om sammensætning af bedømmelsesudvalg til videnskabelige stillinger vil blive udsendt via Akademisk Råd Intranet med en svarfrist på 3 dage. Ved sommerproceduren i august er der en svarfrist på 7 dage. Der gøres opmærksom på udsendelsen via en mødeindkaldelse i Outlook, der vil indeholde dagsorden samt et link til en doodle, hvori medlemmer kan tilkendegive om de godkender/ikke godkender udvalgene.

Dokumentationen som ligger til grund for nedsættelse af bedømmelsesudvalg vil være en oversigt over bedømmelsesudvalgets medlemmer med angivelse af, hvem der er formand samt CV'er for de eksterne bedømmere og stillingsopslaget.

Tilbagemelding fra akademisk råds medlemmer
Der skal aktivt meldes tilbage fra akademisk råds medlemmer via doodlen.

Ingen indsigelser
Såfremt der ikke er indsigelser sendes der udelukkende svar/tilkendegivelse via doodlen.

Indsigelser
Såfremt der er bemærkninger og/eller indsigelser sendes der svar/tilkendegivelse til alle på akademisk råds mailliste.

Alle bemærkninger/kommentarer der måtte indkomme under en skriftlig høring, vil blive forelagt og drøftet med dekanen/formanden. Hvorefter der vil ske tilbagemelding til akademisk råd via mail.
Et medlem kan ligeledes begære en sag behandlet på det førstkommende møde i Akademisk Råd. Ved tvivlsspørgsmål vil sagen altid blive behandlet på det førstkommende møde.

Inhabilitet
Såfremt et medlem erklærer sig inhabil i relation til behandling af en konkret sag informeres sekretæren herom. Sekretæren informerer de øvrige af rådets medlemmer med information om, at den efterfølgende korrespondance ikke sendes til pågældende medlem.

Vedkommende er ikke stemmeberettiget i den aktuelle sag. Medlemmet skal selv oplyse ved tilbagemeldingen, at sag nr. XXX ikke er behandlet grundet inhabilitet, gøres via kommentarfeltet i doodlen.

Evaluering
Proces for skriftlig høring evalueres løbende på Akademisk Råd møderne, så medlemmerne er i dialog om processen for nedsættelse af bedømmelsesudvalg.

Drøftelsen skal tages op ved marts møderne, så nye medlemmer, der indtræder i Akademisk Råd den 1. februar introduceres til procesplanen.