

# Prof. Dr. Simon Doclo



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## PROFESSIONAL EXPERIENCE

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- since Dec 2010 **Fraunhofer IDMT, Branch Hearing, Speech and Audio Technology**  
Scientific leader “Signal Processing and Personalized Hearing Systems”
- since Sep 2009 **Dept. of Medical Physics and Acoustics, University of Oldenburg, Germany**  
Full Professor (Head of Signal Processing Group)
- Dec 2007-Aug 2009 **NXP Semiconductors, Leuven, Belgium**  
Principal Scientist (Sound & Acoustics Group)
- Jun 2003-Nov 2007 **Dept. of Electrical Engineering, Katholieke Universiteit Leuven, Belgium**  
Postdoctoral Fellow (with Prof. Dr. Marc Moonen)
- Jan 2005-Dec 2005 **Dept. of Electrical Engineering, McMaster University, Canada**  
Visiting Postdoctoral Fellow (with Prof. Dr. Simon Haykin)
- Aug 1997-May 2003 **Dept. of Electrical Engineering, Katholieke Universiteit Leuven, Belgium**  
Research Assistant (with Prof. Dr. Marc Moonen)

## ACADEMIC DEGREES

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- May 2003 PhD in Applied Sciences, Katholieke Universiteit Leuven, Belgium  
“Multi-microphone noise reduction and dereverberation techniques for speech applications”
- Jul 1997 MSc in Electrical Engineering, Katholieke Universiteit Leuven, Belgium (*magna cum laude*)  
“Enhancement of speech intelligibility in hearing aids by adaptive noise suppression in real time”

## RESEARCH INTERESTS

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Signal processing for acoustical and biomedical applications  
Microphone array processing for signal enhancement, sound localisation, echo and feedback suppression  
Distributed and cooperative processing for acoustic sensor networks  
Computational auditory scene analysis, auditory attention decoding  
Application to hearing aids, cochlear implants and assistive listening devices

## AWARDS

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PhD Supervision Award, School of Medicine and Health Sciences, University of Oldenburg, 2019  
Best Paper Award (1st Prize), International Conference on Digital Audio Effects, 2017 (with Kai Siedenburg)  
IEEE Signal Processing Society 2008 Best Paper Award (with Jingdong Chen, Jacob Benesty, Arden Huang)  
EURASIP Signal Processing Best Paper Award 2003 (with Marc Moonen)  
Best Student Paper Award, International Workshop on Acoustic Echo and Noise Control, 2001  
Master Thesis Award, Royal Flemish Society of Engineers, 1997 (with Erik De Clippel)

## **ACADEMIC FUNCTIONS**

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Director, Dept. of Medical Physics and Acoustics, University of Oldenburg (since 2019)  
Chair of the Board of Examiners, Engineering Physics, University of Oldenburg (since 2018)  
Deputy Member of Doctoral Board, School of Medicine and Health Sciences (since 2014)  
Member of Scientific Committee in Cluster of Excellence Hearing4all (since 2013)  
Member of Joint Committee Engineering Physics, University of Oldenburg (since 2011)

## **OFFICE IN PROFESSIONAL COMMITTEES**

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IEEE Signal Processing Society, Audio and Acoustic Signal Processing Technical Committee (2008-2013, 2017-2019)  
EURASIP, Acoustic, Speech and Music Signal Processing Special Area Team (since 2016-2021)  
EAA, Audio Signal Processing Technical Committee (since 2016)  
ITG, Fachausschuss AT4 Sprachverarbeitung (since 2014)  
ITG, Fachgruppe „Signalverarbeitung und maschinelles Lernen“ (since 2009)  
International Workshop on Acoustic Signal Enhancement, Technical and Steering Committee (since 2013)  
IEEE Benelux Signal Processing Chapter, Technical Committee (2002-2007)  
IEEE Benelux Signal Processing Chapter, Secretary (1997-2002)

## **EDITORIAL ACTIVITIES**

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Associate Editor, IEEE/ACM Transactions on Audio, Speech and Language Processing (2015-2019)  
Associate Editor, EURASIP Journal on Advances in Signal Processing (2014-2019)  
Guest Editor, *IEEE Signal Processing Magazine*, special issue on “Signal Processing Techniques for Assisted Listening” (2015), *Elsevier Signal Processing*, special issue on “Wireless acoustic sensor networks and ad hoc microphone arrays” (2014), *EURASIP Journal on Advances in Signal Processing*, special issues on “Microphone Array Speech Processing” (2009), “Advances in Multimicrophone Speech Processing” (2006), “DSP in Hearing Aids and Cochlear Implants” (2005)

## **CONFERENCE ORGANISATION**

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Technical Program Chair, International Workshop on Acoustic Signal Enhancement, 2020  
Chair, 13th ITG Conference on Speech Communication, 2018  
Area Chair, Audio and Acoustic Signal Processing, European Signal Processing Conference, 2018  
Finance Chair, AES Int. Conference on Dereverberation and Reverberation of Audio, Music, and Speech, 2016  
Area Chair, Audio and Acoustic Signal Processing, European Signal Processing Conference, 2015  
Technical Program Chair, IEEE Workshop on Applications of Signal Processing to Audio and Acoustics, 2013  
Chair, Acoustic Signal Processing Symposium, Oldenburg, Germany, 2011  
Special session organisation: ICA 2019, EUSIPCO 2017, EFAS 2015, ICASSP 2015, EUSIPCO 2013, EUSIPCO 2012.

## **FELLOWSHIPS - GRANTS**

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Research Foundation – Flanders, Postdoctoral Fellowship (6 years, 2004-2010)

European Union, Marie-Curie Outgoing International Fellowship (declined in order to accept Postdoctoral Fellowship of Research Foundation – Flanders)

KU Leuven Research Fund, Postdoctoral Fellowship (1 year, 2003-2004)

Flemish Institute for Scientific and Technological Research, PhD scholarship (4 years, 1998-2002)

## **RESEARCH PROJECTS**

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Cluster of Excellence “Hearing4all - Models, technology and solutions for diagnostics, restoration and support of hearing”, PI, German Research Foundation (2012-2025)

“Computational Auditory Scene Analysis algorithms for improving speech communication in complex acoustic environments”, project in Collaborative Research Centre "Hearing acoustics: Perceptual principles, Algorithms and Applications", PI, German Research Foundation (2018-2022)

“MIMO acoustic earpiece for combined equalization, feedback cancellation and noise reduction”, project in Collaborative Research Centre "Hearing acoustics: Perceptual principles, Algorithms and Applications", PI, German Research Foundation (2018-2022)

“Test, Predict, and Improve Musical Scene Perception of Hearing-Impaired Listeners”, Individual Fellowship, European Union (2018-2020)

“Active sound field control for sound reproduction in open ear canals”, project in Research Unit “Individualized Hearing Acoustics”, PI, German Research Foundation (2012-2018)

“Acoustic scene aware speech enhancement for binaural hearing aids”, Joint Lower Saxony-Israel research project, in cooperation with Bar-Ilan University, PI, VolkswagenStiftung (2015-2018)

“Algorithms and objective measures for speech dereverberation”, in cooperation with Institut National de la Recherche Scientifique (Canada), PI, German Academic Exchange Service (2015-2016)

“Individualized acoustic feedback cancellation for hearing aids”, in cooperation with Curtin University (Australia), PI, German Academic Exchange Service (2015-2016)

“Dereverberation and Reverberation of Audio, Music and Speech (DREAMS)”, PI, Initial Training Network, European Union (2013-2016)

“Signal Dereverberation Algorithms for Next-Generation Binaural Hearing Aids”, in cooperation with International Audio Labs Erlangen and Bar-Ilan University, PI, German-Israeli Foundation for Scientific Research and Development (2013-2015)

“Multi-channel signal processing for networked and spatially distributed microphones”, project in Research Unit “Individualized Hearing Acoustics”, PI, German Research Foundation (2012-2015)

“Signal processing and network design for wireless acoustic sensor networks”, in cooperation with University of Ghent, Research Foundation Flanders (2008-2011)

“Improving the perception of speech and music in cochlear implants”, in cooperation with Cochlear Technology Centre Europe, Flemish Institute for Scientific and Technological Research (2006-2007)

“Performance improvement of cochlear implants by innovative speech processing algorithms”, in cooperation with Cochlear Technology Centre Europe, Flemish Institute for Scientific and Technological Research (2002-2004)

“Multi-microphone signal enhancement techniques for hands-free telephony and voice-controlled systems”, in cooperation with Philips ITCL, Flemish Institute for Scientific and Technological Research (1998-2002)

## PHD MENTORING AND RESEARCH SUPERVISION

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### 1) Supervised PhD theses

Matthias Brandt, *Automatic Restoration of Audio Signals in Media Archives*, May 2018.

Henning Schepker, *Robust feedback suppression algorithms for single- and multi-microphone hearing aids*, Dec. 2017.

Ante Jukić, *Sparse multi-channel linear prediction for blind speech dereverberation*, Nov. 2017.

Ina Kodrasi, *Dereverberation and noise reduction techniques based on acoustic multi-channel equalization*, Dec. 2015.

Daniel Marquardt, *Development and evaluation of psychoacoustically motivated binaural noise reduction and cue preservation techniques*, Nov. 2015.

Eugen Rasumow, *Synthetic reproduction of head-related transfer functions by using microphone arrays*, Mar. 2015.

### 2) Current PhD students

Ali Aroudi, *Speech enhancement using brain-computer interfaces*

Benjamin Cauchi, *Perceptual evaluation of speech dereverberation algorithms*

Naveen Desiraju, *Low-complexity acoustic echo cancellation*

Mina Fallahi, *Individualized dynamic binaural reproduction of 3D sound fields*

Daniel Fejgin, *Acoustic SLAM for hearing aids*

Dörte Fischer, *Speech enhancement exploiting interframe correlations*

Nico Gößling, *Speech processing in acoustic sensor networks*

Toby Lawin-Ore, *Speech enhancement in acoustic sensor networks based on multi-channel Wiener filtering*

Marvin Tammen, *Speech enhancement using machine learning*

### 3) Member of thesis committee and/or examiner of PhD thesis

University of Oldenburg, Germany (Bernd Meyer, Armand Djouguela, Tobias Rosenkranz, Stefan Fredelake, Anna Warzybok, Martin Krawczyk-Becker, Niko Moritz, Julian Grosse)

Leibniz University Hannover, Germany (Ingo Schmädecke)

RWTH Aachen, Germany (Marco Jeub)

University of Erlangen-Nuremberg, Germany (Stefan Wehr, Oliver Thiergart)

Ruhr-Universität Bochum (Sebastian Gergen)

Katholieke Universiteit Leuven, Belgium (Alexander Bertrand, Kim Ngo, Bram Cornelis, Raphael Koning, Thomas Dietzen)

Vrije Universiteit Brussel, Belgium (Georgios Athanasopoulos)

Delft University of Technology, The Netherlands (Andreas Koutrouvelis)

Eindhoven University of Technology, The Netherlands (Tobias May)

Imperial College London, UK (Felicia Lim)

Bar-Ilan University, Israel (Ofer Schwartz)

## MSC STUDENTS

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- 2019 Evaluation of source separation algorithms for speech intelligibility improvement of broadcast signals (C. Dachmann)
- 2019 Optimisation of single-channel DNN-based speech enhancement (M. Zimmermann)
- 2019 Semi-Automatic Magnetic Map Creation For Indoor Localization (D. Fejgin)
- 2018 Preprocessing and noise reduction of speech for playback in reverberant and noisy environments (A. Pusch)
- 2018 Binaural source localization for hearing aids incorporating an external microphone signal (M.-A. Lacroix)
- 2018 Extension and Evaluation of Multichannel Diffuse Power Spectral Density Estimators (M. Tammen)
- 2018 Development and Evaluation of Weighted Partial Noise Preservation Algorithms for Binaural Hearing Aids (J. Klug)
- 2018 Evaluating Feedback Cancellation using a Null-Steering Beamformer for Public Address Systems (J. Deza Sorribas)
- 2017 Analysis and evaluation of multichannel frequency-domain acoustic echo cancellation algorithms (S. Wilksen)
- 2015 Extension and Validation of Near-End Listening Enhancement Algorithms for Hearing-Impaired Listeners (D. Hülsmeier)
- 2014 Analysis of multichannel noise reduction algorithms for spatially distributed microphones and sources (A. Volgenandt)
- 2012 Development and evaluation of near-end listening enhancement algorithms (H. Schepker)
- 2012 Sensor Localization in Acoustic Sensor Networks (C. Bartsch)
- 2012 Analysis of human and algorithmic ability to estimate relative speaker orientation (S. Franz)
- 2012 Reduction of Gaussian, Supergaussian and Impulsive Noise by Processing of the Binary Masking Residual (M. Ruhland)
- 2011 Analysis of joint pitch and position estimation for simultaneous speakers (S. Gerlach)
- 2010 Sensor position optimization for superdirective beamforming (I. Kodrasi)
- 2009 Active noise reduction for cars (K. De Noël, M. Vercruysse)
- 2007 Blind source separation and localisation of multiple speakers (B. Cornelis, K. Vanderloock)
- 2006 Real-time implementation of multi-microphone noise reduction techniques in hearing aids (S. Günaydin, S. Heselmans)
- 2006 Binaural signal processing for hearing aids: Compression (J. Beckers, L. Vandevenne)
- 2003 Multi-microphone source localisation and noise reduction techniques for speech applications (S. Van Hoef)
- 2001 Speech dereverberation techniques for voice-controlled systems (P. Vandewalle)
- 2000 Detection algorithms for echo and noise suppression applications (D. Warnez)
- 1999 Speech enhancement using iterative Wiener filtering techniques (A. Spriet, K. Vanbleu)
- 1999 DSP implementation of spectral subtraction techniques for speech enhancement (R. Geeroms)

## PUBLICATIONS

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**Google Scholar:** Citations: 5095, h-index: 36

### International Journal Papers

1. B. Cauchi, K. Siedenburg, J. F. Santos, T. H. Falk, **S. Doclo**, S. Goetze, "Non-intrusive speech quality prediction using modulation energies and LSTM-network," *IEEE/ACM Trans. Audio, Speech and Language Processing*, vol. 27, no. 7, pp. 1151-1163, Jul. 2019.
2. A. Aroudi, B. Mirkovic, M. De Vos, **S. Doclo**, "Impact of Different Acoustic Components on EEG-based Auditory Attention Decoding in Noisy and Reverberant Conditions," *IEEE Trans. Neural Systems and Rehabilitation Engineering*, vol. 27, no. 4, pp. 652-663, Apr. 2019.
3. H. Schepker, L. T. T. Tran, S. Nordholm, **S. Doclo**, "Null-steering beamformer based feedback cancellation for multi-microphone hearing aids with incoming signal preservation," *IEEE/ACM Trans. Audio, Speech and Language Processing*, vol. 27, no. 4, pp. 679-691, Apr. 2019.
4. T. Dietzen, A. Spriet, W. Tirry, **S. Doclo**, M. Moonen, T. van Waterschoot, "Comparative Analysis of Generalized Sidelobe Cancellation and Multi-Channel Linear Prediction for Speech Dereverberation and Noise Reduction," *IEEE/ACM Trans. Audio, Speech and Language Processing*, vol. 27, no. 3, pp. 544-558, Mar. 2019.
5. M. Brandt, **S. Doclo**, J. Bitzer, "Automatic Noise PSD Estimation for Restoration of Archived Audio," *Journal of the Audio Engineering Society*, vol. 67, no. 1/2, pp. 38-53, Jan/Feb 2019.
6. J. Rannies, A. Pusch, H. Schepker, **S. Doclo**, "Evaluation of near-end listening enhancement algorithms by combined speech intelligibility and listening effort measurements," *Journal of the Acoustical Society of America*, vol. 144, no. 4, EL315-EL321, Oct. 2018.
7. D. Marquardt, **S. Doclo**, "Interaural Coherence Preservation in Binaural Hearing Aids using Partial Noise Estimation and Spectral Postfiltering," *IEEE/ACM Trans. Audio, Speech and Language Processing*, vol. 26, no. 7, pp. 1257-1270, Jul. 2018.
8. I. Kodrasi, **S. Doclo**, "Analysis of Eigenvalue Decomposition-Based Late Reverberation Power Spectral Density Estimation," *IEEE/ACM Trans. Audio, Speech and Language Processing*, vol. 26, no. 6, pp. 1106-1118, June 2018.
9. S. Braun, A. Kuklasinski, O. Schwartz, O. Thiergart, E. A. P. Habets, S. Gannot, **S. Doclo**, J. Jensen, "Evaluation and Comparison of Late Reverberation Power Spectral Density Estimators," *IEEE/ACM Trans. Audio, Speech and Language Processing*, vol. 26, no. 6, pp. 1056-1071, June 2018.
10. L. T. T. Tran, S. Nordholm, H. Schepker, H. H. Dam, **S. Doclo**, "Two-Microphone Hearing Aids Using Prediction Error Method for Adaptive Feedback Control," *IEEE/ACM Trans. Audio, Speech and Language Processing*, vol. 26, no. 5, pp. 909-923, May 2018.
11. I. Kodrasi, **S. Doclo**, "Improving the Conditioning of the Optimization Criterion in Acoustic Multi-Channel Equalization Using Shorter Reshaping Filters," *EURASIP Journal on Advances in Signal Processing*, 2018:11, pp. 1-13.
12. S. Nordholm, H. Schepker, L. T. T. Tran, **S. Doclo**, "Stability-Controlled Hybrid Adaptive Feedback Cancellation Scheme for Hearing Aids," *Journal of the Acoustical Society of America*, vol. 143, no. 1, pp. 150-166, Jan. 2018.
13. M. Brandt, **S. Doclo**, T. Gerkmann, J. Bitzer, "Impulsive Disturbances in Audio Archives: Signal Classification for Automatic Restoration," *Journal of the Audio Engineering Society*, vol. 65, no. 10, pp. 826-840, Oct. 2017.
14. N. K. Desiraju, **S. Doclo**, T. Wolff, "Efficient multichannel acoustic echo cancellation using constrained tap selection schemes in the subband domain," *EURASIP Journal on Advances in Signal Processing*, 2017:63, pp. 1-16.
15. I. Kodrasi, **S. Doclo**, "Signal-Dependent Penalty Functions for Robust Acoustic Multi-Channel Equalization," *IEEE/ACM Trans. Audio, Speech and Language Processing*, vol. 25, no. 7, pp. 1512-1525, Jul. 2017.

16. E. Rasumow, M. Blau, **S. Doclo**, S. van de Par, M. Hansen, D. Püschel, V. Mellert, "Perceptual evaluation of individualized binaural reproduction using a virtual artificial head," *Journal of the Audio Engineering Society*, vol. 65, no. 6, pp. 448-459, June 2017.
17. J. Rennies-Hochmuth, J. Drefs, D. Hülsmeier, H. Schepker, **S. Doclo**, "Extension and evaluation of a near-end listening enhancement algorithm for listeners with normal and impaired hearing," *Journal of the Acoustical Society of America*, vol 141, no. 4, pp. 2526-2537, Apr. 2017.
18. I. Kodrasi, B. Cauchi, S. Goetze, **S. Doclo**, "Instrumental and perceptual evaluation of dereverberation techniques based on robust acoustic multi-channel equalization," *Journal of the Audio Engineering Society*, vol. 65, no. 1/2, Jan./Feb. 2017, pp. 117-129.
19. A. Jukić, T. van Waterschoot, T. Gerkmann, **S. Doclo**, "A general framework for incorporating time-frequency domain sparsity in multi-channel speech dereverberation," *Journal of the Audio Engineering Society*, vol. 65, no. 1/2, Jan./Feb. 2017, pp. 17-30.
20. A. Jukić, T. van Waterschoot, **S. Doclo**, "Adaptive speech dereverberation using constrained sparse multi-channel linear prediction," *IEEE Signal Processing Letters*, vol. 24, no. 1, pp. 101-105, Jan. 2017.
21. A. Kuklasinski, **S. Doclo**, S. H. Jensen, J. Jensen, "Maximum Likelihood PSD Estimation for Speech Enhancement in Reverberation and Noise," *IEEE/ACM Trans. Audio, Speech and Language Processing*, vol. 24, no. 9, pp. 1595-1608, Sep. 2016.
22. H. Schepker, **S. Doclo**, "Least-squares estimation of the common pole-zero filter of acoustic feedback paths in hearing aids," *IEEE/ACM Trans. Audio, Speech and Language Processing*, vol. 24, no. 8, pp. 1334-1347, Aug. 2016.
23. S. Grimm, T. C. Lawin-Ore, **S. Doclo**, J. Freudenberger, "Phase Reference for the generalized multichannel Wiener Filter," *EURASIP Journal on Advances in Signal Processing*, 2016:78, pp. 1-10.
24. I. Kodrasi, **S. Doclo**, "Joint Dereverberation and Noise Reduction Based on Acoustic Multichannel Equalization," *IEEE/ACM Trans. Audio, Speech and Language Processing*, vol. 24, no. 4, pp. 680-693, Apr. 2016.
25. E. Hadad, **S. Doclo**, S. Gannot, "The Binaural LCMV Beamformer and its Performance Analysis," *IEEE/ACM Trans. Audio, Speech and Language Processing*, vol. 24, no. 3, pp. 543-558, Mar. 2016.
26. L. Wang, **S. Doclo**, "Correlation Maximization Based Sampling Rate Offset Estimation for Distributed Microphone Arrays," *IEEE/ACM Trans. Audio, Speech and Language Processing*, vol. 24, no. 3, pp. 571-582, Mar. 2016.
27. E. Rasumow, M. Hansen, S. van de Par, D. Püschel, V. Mellert, **S. Doclo**, M. Blau, "Regularization approaches for synthesizing HRTF directivity patterns," *IEEE/ACM Trans. Audio, Speech and Language Processing*, vol. 24, no. 2, pp. 215-225, Feb. 2016.
28. N. Mohammadiha, **S. Doclo**, "Speech Dereverberation Using Non-negative Convolutional Transfer Function and Spectro-temporal Modeling," *IEEE/ACM Trans. Audio, Speech and Language Processing*, vol. 24, no. 2, pp. 276-289, Feb. 2016.
29. H. Schepker, **S. Doclo**, "A semidefinite programming approach to min-max estimation of the common part of acoustic feedback paths in hearing aids," *IEEE/ACM Trans. Audio, Speech and Language Processing*, vol. 24, no. 2, pp. 366-377, Feb. 2016.
30. J. Thiemann, M. Müller, D. Marquardt, **S. Doclo**, S. van de Par, "Speech Enhancement for Multimicrophone Binaural Hearing Aids Aiming to Preserve the Spatial Auditory Scene," *EURASIP Journal on Advances in Signal Processing*, 2016:12, pp. 1-11.
31. R. Baumgärtel, M. Krawczyk-Becker, D. Marquardt, C. Völker, H. Hu, T. Herzke, G. Coleman, K. Adiloglu, S. Ernst, T. Gerkmann, **S. Doclo**, B. Kollmeier, V. Hohmann, M. Dietz, "Comparing binaural pre-processing strategies I: Instrumental evaluation," *Trends in Hearing*, vol. 19, pp. 1-16, 2015.
32. R. Baumgärtel, H. Hu, M. Krawczyk-Becker, D. Marquardt, T. Herzke, G. Coleman, K. Adiloglu, K. Bomke, K. Plotz, T. Gerkmann, **S. Doclo**, B. Kollmeier, V. Hohmann, M. Dietz, "Comparing binaural pre-processing strategies II: Speech intelligibility of bilateral cochlear implant users," *Trends in Hearing*, vol. 19, pp. 1-18, 2015.

33. E. Hadad, D. Marquardt, **S. Doclo**, S. Gannot, "Theoretical Analysis of Binaural Transfer Function MVDR Beamformers with Interference Cue Preservation Constraints," *IEEE/ACM Trans. Audio, Speech and Language Processing*, vol. 23, no. 12, pp. 2449-2464, Dec. 2015.
34. D. Marquardt, E. Hadad, S. Gannot, **S. Doclo**, "Theoretical Analysis of Linearly Constrained Multi-channel Wiener Filtering Algorithms for Combined Noise Reduction and Binaural Cue Preservation in Binaural Hearing Aids," *IEEE/ACM Trans. Audio, Speech and Language Processing*, vol. 23, no. 12, pp. 2384-2397, Dec. 2015.
35. D. Marquardt, V. Hohmann, **S. Doclo**, "Interaural Coherence Preservation in Multi-channel Wiener Filtering Based Noise Reduction for Binaural Hearing Aids," *IEEE/ACM Trans. Audio, Speech and Language Processing*, vol. 23, no. 12, pp. 2162-2176, Dec. 2015.
36. H. Schepker, J. Rannies, **S. Doclo**, "Speech-in-noise enhancement using amplification and dynamic range compression controlled by the speech intelligibility index," *Journal of the Acoustical Society of America*, vol. 138, no. 5, pp. 2692-2706, Nov. 2015.
37. T. Sankowsky-Rothe, H. Schepker, **S. Doclo**, M. Blau, "Reciprocal measurement of acoustic feedback paths in hearing aids," *Journal of the Acoustical Society of America*, vol. 138, no. 4, EL399-EL404, Oct. 2015.
38. F. Xiong, B. T. Meyer, N. Moritz, R. Rehr, J. Anemuller, T. Gerkmann, **S. Doclo**, S. Goetze, "Front-End Technologies for Robust ASR in Reverberant Environments - Spectral Enhancement-based Dereverberation and Auditory Modulation Filterbank Features," *EURASIP Journal on Advances in Signal Processing*, 2015:70, pp. 1-18.
39. B. Cauchi, I. Kodrasi, R. Rehr, S. Gerlach, A. Jukić, T. Gerkmann, **S. Doclo**, S. Goetze, "Combination of MVDR beamforming and single-channel spectral processing for enhancing noisy and reverberant speech," *EURASIP Journal on Advances in Signal Processing*, 2015:61, pp. 1-12.
40. A. Jukić, T. van Waterschoot, T. Gerkmann, **S. Doclo**, "Multi-channel linear prediction-based speech dereverberation with sparse priors," *IEEE/ACM Trans. Audio, Speech and Language Processing*, vol. 23, no. 9, pp. 1509-1520, Sep. 2015.
41. L. Wang, T. Gerkmann, **S. Doclo**, "Noise Power Spectral Density Estimation Using MaxNSR Blocking Matrix," *IEEE/ACM Trans. Audio, Speech and Language Processing*, vol. 23, no. 9, pp. 1493-1508, Sep. 2015.
42. **S. Doclo**, W. Kellermann, S. Makino, S. Nordholm, "Multichannel signal enhancement algorithms for assisted listening devices," *IEEE Signal Processing Magazine*, vol. 32, no. 2, pp. 18-30, Mar. 2015.
43. N. Mohammadiha, P. Smaragdis, G. Panahandeh, **S. Doclo**, "A State-Space Approach to Dynamic Nonnegative Matrix Factorization," *IEEE Trans. Signal Processing*, vol. 63, no. 4, pp. 949-959, Feb. 2015.
44. T. C. Lawin-Ore, **S. Doclo**, "Analysis of the average performance of the multichannel Wiener filter based noise reduction using statistical room acoustics," *Signal Processing*, vol. 107, pp. 96-108, Feb. 2015.
45. S. Gerlach, J. Bitzer, S. Goetze, **S. Doclo**, "Joint Estimation of Pitch and Direction of Arrival: Improving Robustness and Accuracy for multi speaker scenario," *EURASIP Journal on Audio, Speech and Music Processing*, 2014, 2014:31.
46. E. Rasumow, M. Blau, M. Hansen, S. van de Par, **S. Doclo**, V. Mellert, D. Püschel, "Smoothing individual head-related transfer functions in the frequency and spatial domains," *Journal of the Acoustical Society of America*, vol. 135, no. 4, pp. 2012-2025, Apr. 2014.
47. J. Wouters, **S. Doclo**, R. Koning, T. Francart, "Sound Processing for Better Coding of Monaural and Binaural Cues in Auditory Prostheses," *Proc. IEEE*, vol. 101, no. 9, pp. 1986-1997, Sep. 2013.
48. I. Kodrasi, S. Goetze, **S. Doclo**, "Regularization for Partial Multichannel Equalization for Speech Dereverberation," *IEEE Trans. Audio, Speech and Language Processing*, vol. 21, no. 9, pp. 1879-1890, Sep. 2013.
49. A. Warzybok, J. Rannies, T. Brand, **S. Doclo**, B. Kollmeier, "Effects of spatial and temporal integration of a single early reflection on speech intelligibility," *Journal of the Acoustical Society of America*, vol. 133, no. 1, pp. 269-282, Jan. 2013.



50. B. Cornelis, **S. Doclo**, T. Van den Bogaert, J. Wouters, M. Moonen, "Theoretical analysis of binaural multi-microphone noise reduction techniques", *IEEE Trans. Audio, Speech and Language Processing*, vol. 18, no. 2, pp. 342-355, Feb. 2010.
51. **S. Doclo**, T. Van den Bogaert, M. Moonen, J. Wouters, "Reduced-bandwidth and distributed MWF-based noise reduction algorithms for binaural hearing aids," *IEEE Trans. Audio, Speech and Language Processing*, vol. 17, no. 1, pp. 38-51, Jan. 2009.
52. T. Van den Bogaert, **S. Doclo**, J. Wouters, M. Moonen, "Speech enhancement with multichannel Wiener filter techniques in multimicrophone binaural hearing aids," *Journal of the Acoustical Society of America*, vol. 125, no. 1, pp. 360-371, Jan. 2009.
53. T. Van den Bogaert, **S. Doclo**, J. Wouters, M. Moonen, "The effect of multimicrophone noise reduction systems on sound source localization by users of binaural hearing aids," *Journal of the Acoustical Society of America*, vol. 124, no. 1, pp. 484-497, Jul. 2008.
54. **S. Doclo**, A. Spriet, J. Wouters, M. Moonen, "Frequency-Domain Criterion for the Speech Distortion Weighted Multichannel Wiener Filter for Robust Noise Reduction," *Speech Communication*, special issue on Speech Enhancement, vol. 49, no. 7-8, pp. 636-656, Jul.-Aug. 2007.
55. **S. Doclo**, M. Moonen, "Superdirective Beamforming Robust Against Microphone Mismatch," *IEEE Trans. Audio, Speech and Language Processing*, vol. 15, no. 2, pp. 617-631, Feb. 2007.
56. J. Chen, J. Benesty, Y. Huang, **S. Doclo**, "New Insights Into the Noise Reduction Wiener Filter," *IEEE Trans. Audio, Speech and Language Processing*, vol. 14, no. 4, pp. 1218-1234, Jul. 2006.
57. **S. Doclo**, M. Moonen, "On the Output SNR of the Speech-Distortion Weighted Multichannel Wiener Filter," *IEEE Signal Processing Letters*, vol. 12, no. 12, pp. 809-811, Dec. 2005.
58. **S. Doclo**, M. Moonen, "Multi-Microphone Noise Reduction Using Recursive GSVD-Based Optimal Filtering with ANC Postprocessing Stage," *IEEE Trans. Speech and Audio Processing*, vol. 13, no. 1, pp. 53-69, Jan. 2005.
59. S. Bex, **S. Doclo**, G. Ysebaert, G. Gielen, W. Dehaene, H. De Man, B. De Moor, "The PeopleMover educational project," *IEEE Control Systems Magazine*, vol. 24, no. 5, pp. 83-87, Oct. 2004.
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186. **S. Doclo**, I. Dologlou, M. Moonen, "A novel iterative signal enhancement algorithm for noise reduction in speech," in *Proc. Int. Conf. on Spoken Language Processing (ICSLP)*, Sydney, Australia, pp. 1435-1438, Dec. 1998.

### Conference abstracts

1. W. Middelberg, N. Gößling, **S. Doclo**, "Real-Time Evaluation of an RTF-Steered Binaural MVDR Beamformer Incorporating an External Microphone," *German Annual Conference on Acoustics (DAGA)*, Rostock, Germany, Mar. 2019.
2. N. Gößling, **S. Doclo**, "Comparison of binaural MVDR-based beamforming algorithms using an external microphone," *11th Workshop on Speech in Noise (SpiN)*, Gent, Belgium, Jan. 2019.
3. J. Klug, N. Gößling, **S. Doclo**, "Subjective Evaluation of Signal-Dependent Partial Noise Estimation Algorithms for Binaural Hearing Aids," *11th Workshop on Speech in Noise (SpiN)*, Gent, Belgium, Jan. 2019.
4. C. F. Hauth, N. Gößling, **S. Doclo**, T. Brand, "Performance Prediction of the Binaural MVDR Beamformer with Partial Noise Estimation using a Binaural Speech Intelligibility Model," *11th Workshop on Speech in Noise (SpiN)*, Gent, Belgium, Jan. 2019.
5. M. Tammen, I. Kodrasi, **S. Doclo**, "Joint Estimation of RETFs and PSDs for a Moving Speaker Based on Alternating Least Squares," *ICSEE International Conference on the Science of Electrical Engineering*, Eilat, Israel, Dec. 2018.
6. N. Gößling, **S. Doclo**, "RTF-Based Binaural MVDR Beamformer Exploiting an External Microphone for Dynamic Acoustic Scenarios," *ICSEE International Conference on the Science of Electrical Engineering*, Eilat, Israel, Dec. 2018.
7. N. Gößling, **S. Doclo**, "Comparison of binaural MVDR-based beamforming algorithms using an external microphone," *International Hearing Aid Research Conference (IHCON)*, Lake Tahoe, USA, Aug. 2018.
8. J. Klug, D. Marquardt, **S. Doclo**, "Subjective Evaluation of Signal-Dependent Partial Noise Preservation Algorithms for Binaural Hearing Aids," *International Hearing Aid Research Conference (IHCON)*, Lake Tahoe, USA, Aug. 2018.
9. D. Marquardt, I. Merks, T. Zhang, **S. Doclo**, "Subjective evaluation of binaural noise reduction and cue preservation algorithms in a cocktail party scenario," *International Hearing Aid Research Conference (IHCON)*, Lake Tahoe, USA, Aug. 2018.
10. A. Aroudi, D. Marquardt, **S. Doclo**, "Cognitive-driven binaural speech enhancement system for hearing aid applications," *International Hearing Aid Research Conference (IHCON)*, Lake Tahoe, USA, Aug. 2018.
11. H. Schepker, **S. Doclo**, "Evaluation of acoustic feedback cancellation for a multi-microphone earpiece using a null-steering beamformer," *International Hearing Aid Research Conference (IHCON)*, Lake Tahoe, USA, Aug. 2018.
12. A. Aroudi, D. Marquardt, **S. Doclo**, "Cognitive-driven binaural speech enhancement system for hearing aid applications," *Auditory EEG Signal Processing (AESoP) symposium*, Leuven, Belgium, May 2018.
13. A. Aroudi, **S. Doclo**, "Auditory Attention Decoding in Reverberant and Noisy Conditions," *Workshop on Signal and Noise along the Auditory Pathway (SNAP)*, Lübeck, Germany, Dec. 2017.
14. J. Rennies-Hochmuth, H. Schepker, D. Hülsmeier, J. Drefs, **S. Doclo**, "Evaluating near-end listening enhancement in noise for normal-hearing and hearing-impaired listeners," *Meeting of the Acoustical Society of America and Forum Acusticum*, Boston, USA, Jun. 2017.

15. H. Schepker, **S. Doclo**, “Acoustic feedback cancellation for a novel multi-microphone earpiece combining null-steering and adaptive filtering,” *Erlanger Kolloquium for Audiological Research and Development*, Erlangen, Germany, Feb. 2017.
16. D. Fischer, **S. Doclo**, “Multi-Frame MVDR Filtering for Single- and Multi-Microphone Speech Enhancement,” *Erlanger Kolloquium for Audiological Research and Development*, Erlangen, Germany, Feb. 2017.
17. J. Rennies-Hochmuth, H. Schepker, D. Hülsmeier, J. Drefs, **S. Doclo**, “Noise-adaptive near-end listening enhancement for normal-hearing and hearing-impaired listeners,” *9th Workshop on Speech in Noise: Intelligibility and Quality*, Oldenburg, Germany, Jan. 2017.
18. D. Marquardt, E. Hadad, W.-Q. Pu, **S. Doclo**, S. Gannot, Z.-Q. Luo, I. Merks, T. Zhang, “Performance comparison of two binaural speech enhancement algorithms for hearing aids,” *International Hearing Aid Conference (IHCON)*, Lake Tahoe, USA, Aug. 2016.
19. D. Marquardt, H. Kayser, **S. Doclo**, “Evaluation of MVDR-based Noise Reduction Algorithms for Binaural Hearing Aids in the Presence of DOA Estimation Errors,” *International Hearing Aid Conference (IHCON)*, Lake Tahoe, USA, Aug. 2016.
20. H. Schepker, **S. Doclo**, “Acoustic Feedback Cancellation for a Multi-Microphone Earpiece using a Null-Steering Beamformer,” *International Hearing Aid Conference (IHCON)*, Lake Tahoe, USA, Aug. 2016.
21. **S. Doclo**, D. Marquardt, “Binaural Cue Preservation in Noise Reduction Algorithms for Binaural Hearing Aids”, *12th Congress of the European Federation of Audiology Societies (EFAS)*, Istanbul, Turkey, May 2015.
22. R. Baumgärtel, D. Marquardt, M. Krawczyk, H. Hu, C. Völker, S. Ernst, T. Herzke, G. Coleman, K. Adiloglu, K. Bomke, K. Plotz, R. Huber, T. Gerkmann, **S. Doclo**, B. Kollmeier, V. Hohmann, M. Dietz, “Instrumental and perceptual assessment of binaural speech enhancement algorithms for bilateral CI users”, *12th Congress of the European Federation of Audiology Societies (EFAS)*, Istanbul, Turkey, May 2015.
23. **S. Doclo**, “Noise reduction algorithms in hearing aids: state of the art and evaluation,” *18. Jahrestagung der Deutschen Gesellschaft für Audiologie (DGA)*, Bochum, Germany, Mar. 2015
24. N. Mohammadiha, **S. Doclo**, “Supervised Speech Enhancement”, *Annual Conference of the German Society for Biomedical Engineering*, Hannover, Germany, Oct. 2014.
25. J. Rennies, A. M. Kubiak, **S. Doclo**, “Personalization of audio playback using intuitive self-fitting interfaces”, *Annual Conference of the German Society for Biomedical Engineering*, Hannover, Germany, Oct. 2014.
26. D. Marquardt, V. Hohmann, **S. Doclo**, “Subjective Evaluation of Interaural Coherence Preservation in MWF-based Noise Reduction Algorithms for Binaural Hearing Aids”, *International Hearing Aid Conference (IHCON)*, Lake Tahoe, USA, Aug. 2014.
27. H. Schepker, **S. Doclo**, “Common Part Modeling of Acoustic Feedback Paths in open-fitting Hearing Aids”, *International Hearing Aid Conference (IHCON)*, Lake Tahoe, USA, Aug. 2014.
28. R. Baumgärtel, D. Marquardt, M. Krawczyk, H. Hu, T. Herzke, G. Coleman, K. Adiloglu, K. Bomke, K. Plotz, R. Huber, T. Gerkmann, **S. Doclo**, B. Kollmeier, V. Hohmann, M. Dietz, “Speech understanding in realistic noise environments using binaural signal pre-processing strategies in bilateral CI users”, *International Conference on Cochlear Implants and Other Implantable Auditory Technologies*, Munich, June 2014.
29. D. Marquardt, V. Hohmann, **S. Doclo**, “Perceptually motivated preservation of the Interaural Coherence in noise reduction algorithms for binaural hearing aids”, *German Annual Conference on Acoustics (DAGA)*, Oldenburg, Germany, Mar. 2014.
30. D. Dalga, **S. Doclo**, “ANC-Motivated Noise Reduction Algorithms for Open-Fitting Hearing Aids”, *German Annual Conference on Acoustics (DAGA)*, Oldenburg, Germany, Mar. 2014.
31. H. Schepker, **S. Doclo**, “Comparison of common part modeling of acoustic feedback paths in hearing aids”, *German Annual Conference on Acoustics (DAGA)*, Oldenburg, Germany, Mar. 2014.

32. D. Marquardt, V. Hohmann, **S. Doclo**, “Combined Noise Reduction and Interaural Coherence Reshaping for Binaural Hearing Aids”, *40. Erlanger Kolloquium for Audiological Research and Development*, Erlangen, Germany, Feb. 2013.
33. D. Dalga, **S. Doclo**, “Active Noise Control-Motivated Noise Reduction Algorithms for Open-Fitting Hearing Aids”, *40. Erlanger Kolloquium for Audiological Research and Development*, Erlangen, Germany, Feb. 2013.
34. H. Schepker, J. Rennie, **S. Doclo**, “Improving speech intelligibility in background noise by SII-dependent amplification and compression”, *5th Workshop on Speech in Noise: Intelligibility and Quality*, Vitoria, Spain, Jan. 2013.
35. D. Marquardt, V. Hohmann, **S. Doclo**, “Coherence Preservation in MWF-based Noise Reduction Algorithms for Binaural Hearing Aids”, *Digital Signal Processing in Audiology (AUDIS) Workshop*, Aachen, Germany, Sep. 2012.
36. T. Van den Bogaert, **S. Doclo**, J. Wouters, M. Moonen, “Improvements in speech perception and sound localization in hearing aids using binaural multichannel Wiener filtering,” *International Hearing Aid Research Conference (IHCON)*, Lake Tahoe CA, USA, Aug. 2008.
37. J. Wouters, **S. Doclo**, M. Moonen, T. Van den Bogaert, “Speech-in-noise enhancement and sound localization with improved binaural hearing instruments,” *Acoustics’08*, Paris, France, Jul. 2008
38. J. Wouters, **S. Doclo**, M. Moonen, T. Van den Bogaert, “The use of both ears: noise reduction and localization with bilateral hearing aids,” *8th European Federation of Audiology Societies Congress (EFAS)*, Heidelberg, Germany, June 2007.
39. J. Wouters, **S. Doclo**, K. Eneman, A. Leijon, M. Moonen, A. Spriet, T. Van den Bogaert, “Advanced signal processing for hearing instruments and cochlear implants,” *International Conference on Audiology*, Innsbruck, Austria, Sep. 2006.
40. T.J. Klasen, **S. Doclo**, M. Moonen, T. Van den Bogaert, J. Wouters, “Perceptual and theoretical evaluation of the interaural Wiener filter (IWF) algorithm with respect to speech reception thresholds,” *International Hearing Aid Research Conference (IHCON)*, Lake Tahoe CA, USA, Aug. 2006.
41. T. Van den Bogaert, J. Wouters, T.J. Klasen, **S. Doclo**, M. Moonen, “Perceptual and theoretical evaluation of the interaural Wiener filter (IWF) algorithm with respect to localization cues,” *International Hearing Aid Research Conference (IHCON)*, Lake Tahoe CA, USA, Aug. 2006.
42. J. Patrick, L. Van Deun, A. Spriet, **S. Doclo**, K. Eftaxiadis, J. Laneau, J.-B. Maj, M. Moonen, B. Van Dijk, A. Van Wieringen, J. Wouters, “Better understanding of speech in noise with BEAM™, a two-microphone adaptive beamformer in the Nucleus Freedom™ system,” *5th Asia Pacific Symposium on Cochlear Implants and Related Sciences*, Hong Kong, China, Nov. 2005.
43. J. Wouters, L. Van Deun, A. Spriet, **S. Doclo**, J. Laneau, M. Moonen, A. Van Wieringen, “Signal processing strategies for improved speech understanding in noisy listening conditions,” *2005 Conference on Implantable Auditory Prostheses (CIAP)*, Pacific Grove CA, USA, Aug. 2005.
44. A. Spriet, L. Van Deun, **S. Doclo**, K. Eftaxiadis, J. Laneau, J.-B. Maj, M. Moonen, B. Van Dijk, A. van Wieringen, J. Wouters, “Evaluation of speech understanding in noise with a two-microphone adaptive beamformer in the new Nucleus cochlear implant system,” *7th European Federation of Audiology Societies Congress (EFAS)*, Göteborg, Sweden, June 2005.
45. **S. Doclo**, A. Spriet, M. Moonen, J. Wouters, “Frequency-Domain Criterion for Speech Distortion Weighted Multichannel Wiener Filtering for Robust Noise Reduction,” *Joint Workshop on Hands-Free Speech Communication and Microphone Arrays (HSCMA)*, Piscataway NJ, USA, Mar. 2005.
46. J. Wouters, A. Spriet, L. Van Deun, **S. Doclo**, K. Eftaxiadis, J. Laneau, M. Moonen, B. Van Dijk, A. van Wieringen, “Enhanced speech understanding with a two-microphone adaptive beamformer in the new Nucleus cochlear implant system,” *10th Symposium on Cochlear Implants in Children*, Dallas TX, USA, Mar. 2005.
47. L. Van Deun, A. Spriet, **S. Doclo**, K. Eftaxiadis, J. Laneau, J.-B. Maj, M. Moonen, B. Van Dijk, A. van Wieringen, J. Wouters, “Benefit of a two-microphone adaptive beamformer in the new Nucleus cochlear implant system,” *International Collegium for Rehabilitative Audiology (ICRA)*, Gainesville FL, USA, Mar. 2005.



48. **S. Doclo**, A. Spriet, J. Wouters, M. Moonen, “Design, implementation and evaluation of a robust multi-microphone noise reduction algorithm for hearing instruments,” *International Hearing Aid Research Conference (IHCON)*, Lake Tahoe CA, USA, Aug. 2004.
49. J. Wouters, **S. Doclo**, T. Klasen, J.-B. Maj, M. Moonen, L. Royackers, A. Spriet, T. Van den Bogaert, “Noise reduction approaches for improved speech perception,” *International Hearing Aid Research Conference (IHCON)*, Lake Tahoe CA, USA, Aug. 2004.
50. **S. Doclo**, A. Spriet, J.-B. Maj, M. Moonen, J. Wouters, B. Van Dijk, J. Janssen, “Design and low-cost implementation of a robust multichannel noise reduction scheme for cochlear implants,” *DSP Valley Annual Research and Technology Symposium (DARTS)*, Leuven, Belgium, Oct. 2003.
51. **S. Doclo**, M. Moonen, “Design of robust broadband beamformers for speech applications,” *International Workshop on Microphone Array Systems*, Erlangen, Germany, May 2003.
52. **S. Doclo**, M. Moonen, “Multi-microphone noise reduction using GSVD-based optimal filtering,” *International Workshop on Microphone Array Systems*, Boston MA, USA, Oct. 2000.

## PATENTS

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**S. Doclo**, A. Spriet, M. Moonen, J. Wouters, “Method and device for noise reduction” (US7657038; EP1652404; JP4989967)

S. Haykin, R. Dong, **S. Doclo**, M. Moonen, “Method and device for binaural signal enhancement” (US8139787)

**S. Doclo**, T.J. Klasen, M. Moonen, T. Van den Bogaert, J. Wouters, R.P. Derleth, S. Korl, “Hearing system and method implementing binaural noise reduction preserving interaural transfer functions” (US2010002886; EP2016799)

T. Gautama, **S. Doclo**, “Hybrid active noise reduction device for reducing environmental noise, method for determining an operational parameter of a hybrid active noise reduction device, and program element” (EP2259250)

**S. Doclo**, “Active noise reduction method using perceptual masking” (US9437182; EP2284831; CN101989423)

H. Schepker, J. Rennies, **S. Doclo**, J. E. Appell, “Improving speech intelligibility in background noise by SII-dependent amplification and compression” (US10319394; EP2943954; JP6162254)

D. Püschel, M. Blau, S. Köhler, E. Rasumow, S. van de Par, M. Hansen, **S. Doclo**, V. Mellert, “Device and method for the determination of head-related transfer functions” (DE102014204368)

## INVITED LECTURES

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1. “Binaural speech enhancement and cue preservation algorithms,” ELOBES Workshop - Optimising Binaural Hearing for Environment and Listener, Gent, Belgium, Jan. 2019. (**keynote**)
2. “Cognitive-Driven Binaural Speech Enhancement System for Hearing Aid Applications”, International Hearing Aid Research Conference, Lake Tahoe, USA, Aug. 2018.
3. “Algorithmen zur Verbesserung der Sprachqualität in Hörgeräten“, Oticon Symposium, Hamburg, Germany, Nov. 2017.
4. “Acoustically Transparent Hearing Device: Towards Integration of Individualized Sound Equalization, Electro-Acoustic Modeling and Feedback Cancellation”, International Workshop on Challenges in Hearing Assistive Technology, Stockholm, Sweden, Aug. 2017.
5. “A Simulation Study on Binaural Dereverberation and Noise Reduction based on Diffuse Power Spectral Density Estimators,” International Workshop on Challenges in Hearing Assistive Technology, Stockholm, Sweden, Aug. 2017.
6. “Highlights from Hearing4all for patients with hearing aids and the subclinical population”, European Federation of Audiology Societies Conference, Interlaken, Switzerland, June 2017.
7. “Binaural beamforming and acoustic sensor networks”, DEGA Electroacoustics Technical Committee Meeting, Ilmenau, Germany, Feb. 2017.

8. "Recent advances in noise reduction and dereverberation algorithms for binaural hearing aids", Erlanger Kolloquium for Audiological Research and Development, Erlangen, Germany, Feb. 2017. **(keynote)**
9. "Incorporating sparsity into multi-microphone speech dereverberation techniques," ICSEE Symposium on Speech and Audio Processing, Eilat, Israel, Nov. 2016.
10. "Overview of acoustic signal processing research", NXP Semiconductors, Leuven, Belgium, Mar. 2016.
11. "Design and evaluation of binaural speech enhancement and cue preservation algorithms", KU Leuven (Experimental Oto-rhino-laryngology, Dept. Electrical Engineering), Leuven, Belgium, Mar. 2016.
12. "Binaural Cue Preservation in Noise Reduction Algorithms for Binaural Hearing Aids", Binaural Hearing Workshop, Delmenhorst, Germany, June 2015.
13. "Binaural Cue Preservation in Noise Reduction Algorithms for Binaural Hearing Aids", Hearing Aid Developers Forum, Oldenburg, Germany, June 2015.
14. "Binaural Cue Preservation in Noise Reduction Algorithms for Binaural Hearing Aids", 12<sup>th</sup> European Federation of Audiology Societies Congress, Istanbul, Turkey, June 2015.
15. "Binaural noise reduction for hearing aids", Starkey Hearing Technologies and IEEE-TC SP/COM Chapter Joint Meeting, Minneapolis, USA, Oct. 2013.
16. "Spatial cue preservation for binaural noise reduction", Hearing Aid Developers Forum, Oldenburg, Germany, June 2013.
17. "Non-Intrusive Regularization for Least-Squares Multichannel Equalization Techniques for Speech Dereverberation," IEEE Convention of Electrical and Electronics Engineers in Israel, Eilat, Israel, Nov. 2012.
18. "Signal processing algorithms for wirelessly connected hearing devices", Nordic Audiology College, Stockholm, Sweden, Sep. 2012.
19. "Statistical Room Acoustics in Acoustic Sensor Networks", NTT Communication Science Labs, Kyoto, Japan, Apr. 2012.
20. "Digital Signal Processing in Hearing Aids", DGMP Winter school on Audiology and Signal Processing, Pichl, Austria, Feb 2012.
21. "Signal processing for open-fitting hearing aids", Kolloquium Kommunikationstechnik, IND - RWTH Aachen, Germany, July 2011.
22. "Hearing devices using wireless acoustic sensor networks", Hearing Aid Developers Forum, Oldenburg, Germany, June 2011. **(keynote)**
23. "Distributed microphone array signal processing with rate constraints", ITG Conference Speech Communication, Bochum, Germany, Oct. 2010.
24. "Distributed microphone array signal processing for hearing aids", International Workshop on Acoustic Echo and Noise Control (IWAENC), Tel Aviv, Israel, Sep 2010. **(keynote)**
25. "Distributed microphone array signal processing in hearing aids", tubs.CITY Symposium – Workshop on Spoken Language Processing, Braunschweig, Germany, June 2010.
26. "Speech signal processing in noisy and reverberant acoustic environments", School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore, Sep 2007.
27. "Noise reduction and binaural cue preservation of multi-microphone algorithms", International Forum for hearing instruments developers, Oldenburg, Germany, June 2007.
28. "Robust multi-microphone speech enhancement for hearing instruments", Dept. of Electrical and Computer Engineering, University of Waterloo, Canada, May 2007.
29. "Binaural noise reduction using the Interaural Wiener Filter: physical and perceptual evaluation," Joint Acoustics, Medical Physics, and Signal Processing Seminar, University of Oldenburg, Germany, Oct. 2006.
30. "Binaural Noise Reduction for Hearing Aids," ASIP-NET Seminar, Smørum, Denmark, Oct. 2006.
31. "Robust multi-microphone noise reduction in hearing instruments", ASL Seminar, McMaster University, Hamilton, Canada, Mar. 2005.
32. "Microphone array noise reduction and dereverberation techniques for speech applications", SPS Seminar, Technical University of Eindhoven, The Netherlands, Dec. 2004.

33. "Design and low-cost implementation of a robust multichannel noise reduction scheme for cochlear implants", IKA Seminar, Ruhr-University Bochum, Germany, Jan. 2004.
34. "Design and low-cost implementation of a robust multichannel noise reduction scheme for cochlear implants," IND Seminar, RWTH Aachen, Germany, Jan. 2004.
35. "Design and low-cost implementation of a robust multichannel noise reduction scheme for cochlear implants," DSP Valley Annual Research and Technology Symposium, Leuven, Belgium, Oct. 2003.
36. "Multi-microphone noise reduction and dereverberation techniques for speech applications", SPS Seminar, Technical University of Eindhoven, The Netherlands, July 2003.
37. "Applications of DSP in Audio and Digital Communications", GroepT Hogeschool, Leuven, Belgium, Dec. 2001.
38. "Multi-microphone signal enhancement techniques for noisy speech signals", TCTS Seminar, Faculté Polytechnique de Mons, Belgium, Dec. 1999.