

CURRICULUM VITAE

Torsten Dau

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EDUCATION

- 1997 – 2003 HABILITATION DEGREE IN APPLIED PHYSICS (Dr. rer. nat. habil.)
University of Oldenburg, Germany, Habilitation thesis on “Physical principles in auditory processing and perception”.
- 1993 – 1996 DOCTORAL DEGREE IN PHYSICS (Dr. rer. nat.)
University of Oldenburg, Germany, Thesis on “Modeling auditory processing of amplitude modulation”.
- 1987 – 1992 STUDY OF PHYSICS
Master’s degree, University of Göttingen, Germany.
- 1985 – 1987 FIRST GRADUATION IN MECHANICAL ENGINEERING (Vordiplom)
University of Hannover, Germany.

ACADEMIC POSITIONS

- 2013 – Present HEAD of Centre of Excellence for Hearing and Speech Sciences (CHeSS) supported by the Oticon Foundation, Technical University of Denmark (DTU)
- 2009 – Present MEMBER of the LEADERSHIP and MANAGEMENT GROUP at the Department of Electrical Engineering, Technical University of Denmark (DTU)
- 2008 – Present HEAD of group HEARING SYSTEMS, SPEECH AND COMMUNICATION at Department of Electrical Engineering, Technical University of Denmark (DTU).
- 2003 – Present PROFESSOR FOR AUDIOLOGY AND ACOUSTICS and HEAD of CENTRE FOR APPLIED HEARING RESEARCH
Department of Electrical Engineering, Technical University of Denmark (DTU).
- 1998 – 2003 ASSISTANT PROFESSOR
Physics Department of the University of Oldenburg, Germany.
- 1999 – 2000 VISITING SCIENTIST
Boston University (Biomedical Engineering, Hearing Research) and Massachusetts Institute of Technology (MIT).
- 1996 – 1998 POSTDOCTORAL RESEARCH FELLOW
Physics Department, University of Oldenburg, Germany.

OTHER PROFESSIONAL EXPERIENCE

- since 2014 Associate Editor of the Journal “Trends in Hearing”

2010 - 2013	Associate Editor of the Journal of the Acoustical Society of America (JASA)
2008/2009	Editor of EURASIP Journal on Advances in Signal Processing; Special issue on: Digital Signal Processing for Hearing Instruments.
2007/2009/2011	Chairman and co-organizer of the International Symposium on Auditory and Audiological Research.
since 2008	Member of the board of the Danavox Jubilee Foundation
since 2007	Supervisor for assistant professors through their University teaching education program at DTU (UDTU)
since 2006	Member of the Technical Committee Hearing Acoustics ("Fachausschuss Hörakustik") of the German Acoustic Society (DEGA)
since 2005	Member of DTU's staff-student committee and programme committee for Ph.D. studies. Member of the DTU (Department of Electrical Engineering) research and innovation committee.
2004	Co-organizer of the International Conference on "Auditory Scene Analysis and Speech Perception by Humans, Animals and Machines", at the Hanse Institute for Advanced Study, Delmenhorst, Germany, August.
2002	Co-organizer of a multidisciplinary international symposium on "Pitch: Neural coding and perception," held at the Hanse Institute for Advanced Study, Delmenhorst, Germany, August 14-18.
2001-2004	Co-organizer of several "International symposia on hearing sciences", Hanse Institute for Advanced Study, Delmenhorst, Germany.
2002 – 2005	Elected member of the Technical Committee for Psychological and Physiological Acoustics in the Acoustical Society of America.
1999	Chair of a special session on "Recent advances in models of auditory processing" at the joint meeting of ASA, EAA and DEGA in Berlin.
1998	Co-organizer of the international summer school and symposium "Psychophysics, Physiology and Models of Hearing" in Bad Zwischenahn, Germany; Editor of the conference proceedings (World Scientific).
1997 – Present	Ad hoc reviewer for: <i>Journal of the Acoustical Society of America; Acta Acustica; Journal of the Association for Research in Otolaryngology; Ear and Hearing; Hearing Research; Speech Communication, Int. Journal of Audiology; Journal of Computational Neuroscience; Journal of Speech, Language, and Hearing Research, IEEE signal processing, EURASIP.</i>

AWARDS AND HONORS

2014	HONORARY AWARD from Ulrik Brinch Foundation for outstanding scientific work within medicine, engineering or agricultural science
2012	BEST TEACHER of the semester (spring 2012) at DTU's Department of Electrical Engineering based upon the student evaluations
2010	PH.D. SUPERVISOR OF THE YEAR AWARD at the Technical University of Denmark
2010	EARLY CAREER AWARD of the <i>International Commission for Acoustics (ICA)</i> ; worldwide recognition for "substantial contributions through published papers to the advancement of theoretical or applied acoustics".

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- 2007 INDUSTRIAL RESEARCH AWARD within Culture and Communication; for “excellent interdisciplinary research in hearing as one of the most important prerequisites for communication”, denoted by “Danmarks Erhvervsforsknings Akademi”.
- 2005, 2006 TEACHING AWARD: One of the best three teachers at the department Ørsted•DTU, Technical University of Denmark, based on the students’ course evaluation.
- 2005 ACOUSTICAL SOCIETY OF AMERICA
Elected Fellow of the Acoustical Society of America, for contributions to understanding and modeling of signal processing of fluctuating sounds in the auditory system.
- 2002 HANSE INSTITUTE FOR ADVANCED STUDY (Delmenhorst, Germany)
Member of the scientific advisory board; responsible for advising the Institute with regard to the organization of a series of international workshops on “Hearing Science”.
- 2000 MAX-KADE FOUNDATION (New York)
Sabbatical fellowship for research stay at Boston University (BU) and Massachusetts Institute of Technology (MIT), USA.
- 1998 GERMAN ACOUSTICAL SOCIETY (DEGA)
Lothar-Cremer Award for outstanding contributions of young researchers in the field of acoustics. Awarded for results from the doctoral thesis on “Modeling auditory processing of amplitude modulation”.
- 1996 GERMAN RESEARCH FOUNDATION (DFG)
Research Fellowship for the Doctoral Thesis.

MAJOR FUNDING

- 2013 - 2017 OTICON FOUNDATION, Oticon Centre of Excellence for Hearing Science, Speech and Communication (CHeSS) (36.5 Mio DKK)
- 2013 – 2016 EUROPEAN FP7 COLLABORATIVE PROJECT “Reading the World with Two Ears” (TWO!EARS), 3-years postdoc grant.
- 2013 - 2016 RESEARCH CONSORTIUM with Danish hearing aid industry
- 2013 – 2016 EUROPEAN INITIAL TRAINING NETWORK (ITN)
“Improved Communication through Applied Hearing Research” (ICanHear), two Ph.D. grants, one postdoc grant.
- 2012 – 2015 EUROPEAN INITIAL TRAINING NETWORK (ITN)
“Investigating Speech Processing I Realistic Environments” (INSPIRE), two Ph.D. grants.
- 2010 – 2013 OTICON FOUNDATION
Postdoc and Ph.D. Research grants.
- 2009 – 2012 RESEARCH CONSORTIUM
with Danish hearing aid industry: “Multidisciplinary analysis and functional modelling of human auditory signal processing in complex acoustic environments ”
- 2009 – 2011 DANISH RESEARCH COUNCIL (FTP)
Research project: “Spectro-temporal processing of complex sounds in the human auditory system”
- 2007 – 2009 CARLSBERG FOUNDATION
Fundamental research project: “Byggestene I spontant talt dansk – akustisk og perceptuelt”
- 2007 – 2008 OTICON FOUNDATION
Research project: “A loudspeaker-based virtual auditory environment for studying human auditory processing in complex environments”

2006– 2008	OTICON FOUNDATION Research project: “The origin of variation in speech processing strategies: Perceptual studies”
2006 – 2009	GERMAN RESEARCH FOUNDATION (DFG) Special research program: “Das active Gehör” (co-applicant).
2005– 2008	DANISH RESEARCH COUNCIL (STVF) Research consortium with Danish hearing aid industry: “Characterizing hearing impairment in complex environments, or: What does the impaired ear tell the brain?”
2004 – 2005	DANISH RESEARCH COUNCIL (STVF) Research project: “Modeling the effective signal processing in the impaired auditory system”.
2000 – 2004	GERMAN RESEARCH FOUNDATION (DFG) Research program “Temporal processing in the central auditory system” (Principal investigator)
1996 – 2002	GERMAN RESEARCH FOUNDATION (DFG) Special research program “Neural basis of cognitive function” (Principal investigator)

TEACHING EXPERIENCE

Lectures:	Physics for undergraduates; Physical measurements and digital signal processing; Technical audiology; Auditory signal processing and perception; Psychological and physiological acoustics; Advanced topics in biomedical engineering; Advanced topics in hearing research; Acoustic communication.
Lab courses:	Auditory signal processing and perception; Acoustic communication and audiology; Digital signal processing; Psychophysics; Neurosensory systems and neural base of cognition, Technical Audiology; Advanced topics in biomedical signal processing.
Seminars:	Psychophysics; Physiological acoustics; Models of hearing; Neural coding and perception of sound; Neural correlates of pitch; Advanced topics in electrical engineering.

RESEARCH INTERESTS

Broad:	Auditory perception; signal processing; systems neuroscience; hearing impairment; speech perception; hearing aids and cochlear implants; auditory scene analysis.
Specific:	Functional models of auditory signal processing and perception; Generation mechanisms of otoacoustic emissions and acoustically evoked potentials; Behavioural measures of cochlear function; Neural models of binaural hearing; Modeling of the perceptual consequences of hearing impairment; Speech perception in complex acoustic environments; Models of pitch perception; Role of spatial and temporal cues in the formation of auditory objects; Relation between auditory evoked brain potentials and perception; Computational auditory scene analysis.

GRADUATE ADVISING

Ph.D. projects

Thomas Bentsen	“Computational speech segregation inspired by principles of auditory processing”; Thesis completion: June 2017.
Chris. Scheidiger	“Predicting the consequences of hearing loss and hearing-aid signal processing on speech intelligibility”; Thesis completion: January 2017.
François Guerit	“Spectral and temporal processing in electric hearing”; Thesis completion: December 2016.

Alan Wiinberg	“Effects of hearing aid signal processing on temporal auditory perception”; Thesis completion: September 2016.
Suyash Joshi	“Improvement of cochlear implant stimulation strategies using auditory modeling”; Thesis completion: July 2016.
Richard McWalter	“Analysis of the auditory system via synthesis of natural sounds, speech and music”; Thesis completion: May 2016.
Jens Cubick	“Characterizing the auditory cues for the processing and perception of spatial sounds”; Thesis completion: March 2016.
Henrik Hassager	“Modeling perceptual externalization in the normal, impaired and aided-impaired auditory system”; Thesis completion: March 2016.
Federica Bianchi	“Pitch representations in the impaired auditory system and implications for music perception”; Thesis completion: Dec. 2015.
Johannes Zaar	“Modeling the consequences of hearing loss and hearing-aid processing on consonant perception” Thesis completion: Sept 2015.
Gusztav Locsei	“Characterization and prediction of perceptual consequences of individual hearing loss” Thesis completion: Sept.2015
Johannes Käsbach	“Correlations between physical and perceptual parameters of acoustic scenarios. Implications for auditory modeling and sound design”, Thesis completion: Nov. 2014.
M. Fereczkowski	“Design and evaluation of individualized hearing-aid signal processing and fitting”, Thesis completion: October 2014.
Simon Christiansen	“Temporal coherence in the perceptual organization of auditory scenes in normal, impaired and aided-impaired listeners”, Thesis completion: August 2014.
Marton Marschall	“Characterizing human auditory processing in reverberant environments with multiple sound sources”. Theses completion: March 2014.
Jasmina Catic	“Distance perception in impaired and aided-impaired hearing”. Thesis completion: March 2013.
Søren Jørgensen	“Predicting the intelligibility of processed noisy speech based on the signal-to-noise ratio in the modulation domain”, completed in October 2013.
Remi Decorsière	“Speech intelligibility enhancement using modern envelope and phase manipulations”, completed in August 2013.
Filip Rønne	“Modeling human auditory evoked brain responses to complex sounds”, completed in June 2012.
Claus Christiansen	“Prediction of speech perception based on auditory processing models”, completed in June 2012.
Iris Arweiler	“Processing of spatial sounds in the impaired auditory system”, completed in June 2011, Technical University of Denmark.
S. Santurette	“Neural coding and perception of pitch in the normal and impaired human auditory system”, completed in May 2011, Technical University of Denmark.
Sylvain Favrot	“Investigating the auditory mechanisms underlying the enhancement of speech intelligibility by early reflections”, completed in March 2010, Technical University of Denmark.
Sarah Verhulst	“Mechanisms and models of otoacoustic emissions in humans”, completed in February 2010, Technical University of Denmark.
Morten Jepsen	“Modeling auditory and speech processing and perception in normal-hearing and hearing-impaired listeners”, completed in February 2010, Technical University of Denmark.

Helen Connor	“Hearing-aid amplification at soft input levels”, completed in January 2010, Technical University of Denmark.
Jens-Bo Nielsen	“Assessment of speech intelligibility in background noise and reverberation”, completed in December 2009, Technical University of Denmark.
Tobias Piechowiak	“Spectro-temporal analysis of complex sounds in the human auditory system”, completed in September 2009, Technical University of Denmark.
Eric Thompson	“Characterizing binaural processing of amplitude modulated sounds”, completed in August 2009, Technical University of Denmark.
Olaf Strelcyk	“Peripheral auditory processing and speech reception in impaired hearing”, completed in June 2009, Technical University of Denmark.
Gilles Pigasse	“Auditory-evoked brain responses as a correlate of hearing function”, completed in February 2009, Technical University of Denmark.

EXTERNAL PH.D. THESIS COMMITTEES

Jan Hots	University of Magdeburg (D); Member of thesis committee; July 2014.
Bastiaan Warnaar	University of Amsterdam (NL); Member of the thesis committee, December 2013.
Agnes Leger	University Paris Descartes (F); Member of the thesis committee, December 2012.
Christos Koniaris	KTH Royal Institute of Technology (S); Member of the thesis committee, October 2012.
Simon Goldman	Cambridge University (UK); Member of thesis committee; graduated January 2011.
Miguel de Toro	Aalborg University (DK); Member of thesis committee; graduated December 2010.
Nicolas Le Goff	Technical University of Eindhoven (NL); Member of thesis committee; grad. Feb. 2010.
Finn Dubbelboer	University of Amsterdam (NL); Member of thesis committee; graduated November 2009.
Tom Goossens	Technical University of Eindhoven (NL); Member of thesis committee; grad. Sept. 2008
Karen Reuter	Aalborg University (DK); Member of thesis committee; graduated November 2006.
Rodrigo Ordonez	Aalborg University (DK); Member of thesis committee; graduated April 2005.
Jan Koopman	University of Amsterdam (NL); Member of thesis committee; graduated March 2004.
Martin Vestergaard	Technical University of Denmark (DK); Member of thesis committee; graduated Feb. 2004.

REFEREED JOURNAL PUBLICATIONS

1. May, T. and Dau, T. (2014). “Requirements for a realistic assessment of computational speech segregation”, submitted to *Journal of the Acoustical Society of America*.
2. May, T. and Dau, T. (2014). “Computational speech segregation based on auditory inspired modulation analysis”, submitted to *Journal of the Acoustical Society of America*.
3. Jørgensen, S., Decorsière, R., and Dau, T. (2014). “Effects of manipulating the envelope signal-to-noise ratio on speech intelligibility”, submitted to *Journal of the Acoustical Society of America*.
4. Jørgensen, S., Cubick, J., and Dau, T. (2014). “Subjective and objective evaluation of speech intelligibility of mobile communication systems”, submitted to *Acta Acustica united with Acustica*.
5. Decorsière, R., Søndergard, P., MacDonald, E. and Dau, T. (2014). “Optimization approach to the reconstruction of a signal from a spectrogram-like representation”, *IEEE Transactions on Audio, Speech and Language Processing*, accepted.
6. Arweiler, I., Buchholz, J., and Dau, T. (2014). “Speech intelligibility with binaurally linked hearing aids“, submitted to *International Journal of Audiology*.
7. Rønne, F., Møllenbach, S., Dau, T., and Harte, J.M. (2014). “Investigating the potential of auditory steady-state responses to assess loss of cochlear compression”, *Journal of the Acoustical Society of America, cond. accept.*
8. Vatti, M., Santurette, S., Pontoppidan, N.H., and Dau, T. (2014). “Perception of a sung vowel as a function of frequency-modulation rate and excursion in normal-hearing and hearing-impaired listeners”, *Journal of Speech, Language and Hearing Research*, in press.

9. Chabot-Leclerc, A., Jørgensen, S., and Dau, T. (2014). "The importance of auditory spectro-temporal modulation filtering and decision metric for speech intelligibility prediction", *Journal of the Acoustical Society of America* 135, 3502-3512.
10. Jepsen, M.L., Ghitza, O., and Dau, T. (2013). "Characterizing peripheral hearing impairment: Beyond non-speech psychophysics", *Journal of the Acoustical Society of America* (EL 179- EL85).
11. Nielsen, J.B., Dau, T. and Neher, T. (2014). "A Danish open-set speech corpus for competing-speech studies", *Journal of the Acoustical Society of America* 135, 407-420.
12. Christiansen, S.K., Jepsen, M.L. and Dau, T. (2014). "Effects of tonotopicity, adaptation, modulation tuning and temporal coherence on in "primitive" auditory stream segregation", *Journal of the Acoustical Society of America* 135, 323-333.
13. Bianchi, F., Verhulst, S., and Dau, T. (2013). "Evidence of a cochlear source of the precedence effect", *Journal of the Association for Research in Otolaryngology* 14, 767-779.
14. Christiansen, C.F., MacDonald, E.N., and Dau, T. (2013). "Contribution of high-rate envelope fluctuations to release from speech-on-speech masking", *Journal of the Acoustical Society of America* 134, 2197-2204.
15. Jørgensen, S., Dau, T., and Ewert, S.D. (2013). "A multi-resolution envelope-power based model for speech intelligibility", *Journal of the Acoustical Society of America* 134, 436-446.
16. Westermann, A., Buchholz, J.M., and Dau, T. (2013). "Binaural dereverberation based on interaural coherence", *Journal of the Acoustical Society of America* 133,1-11.
17. Catic, J., Santurette, S., Buchholz, J.M., Gran, F., and Dau, T. (2013). "The effect of interaural level difference fluctuations on the externalization of sound", *Journal of the Acoustical Society of America* 134,1232-1241.
18. Arweiler, I., Buchholz, J., and Dau, T. (2013). "The influence of masker type on early-reflection processing and speech intelligibility", Letter to *Journal of the Acoustical Society of America* 133,13-16.
19. Dau, T., Ewert, S.D., and Piechowiak, T. (2013). "Modelling within- and across-channel processes in comodulation masking release", *Journal of the Acoustical Society of America* 133, 350-364.
20. Verhulst, S., Dau, T. and Shera, C. A. (2012). "Non-linear time-domain cochlear model for transient stimulation and human otoacoustic emission," *Journal of the Acoustical Society of America* 132, 3842–3848.
21. LeGoff, N., Dau, T., and Kohlrausch, A. (2012). "Effects of diotic fringes on interaural disparity detection", Letter to *Journal of the Acoustical Society of America* 132, 2959-2962.
22. Santurette, S., Dau, T., and Oxenham, A.J. (2012). "On the possibility of a place code for the low pitch of high-frequency complex tones", *Journal of the Acoustical Society of America* 132, 3883–3895.
23. Christiansen, C.F., and Dau, T. (2012). "Relationship between masking release in fluctuating maskers and speech reception thresholds in stationary noise", *Journal of the Acoustical Society of America* 132,1655-1666.
24. Santurette, S., and Dau, T. (2012). "Relating binaural pitch perception to the individual listener's auditory profile", *Journal of the Acoustical Society of America* 131, 2968-2986
25. Rønne, F.M., Harte, J.M., Elberling, C., and Dau, T. (2012). "Modeling auditory evoked brainstem responses to transient stimuli", *Journal of the Acoustical Society of America* 131, 3903-3913.
26. Jepsen, M.L., Dau, T. (2011) "Characterizing auditory processing and perception in individual listeners with sensorineural hearing loss", *Journal of the Acoustical Society of America*, 129 (1), 262-281.
27. Jørgensen, S., and Dau, T. (2011) "Predicting speech intelligibility based on the signal-to-noise envelope power ratio after modulation-frequency selective processing", *Journal of the Acoustical Society of America*, 130(3), 1475-1487.
28. Bentsen, T., Harte, J.M. and Dau, T. (2011). „Human cochlear tuning estimates from stimulus-frequency otoacoustic emissions", *Journal of the Acoustical Society of America* 129, 3797-3807.
29. Nielsen, J.B., and Dau, T. (2011). "The Danish Hearing in Noise Test", *International Journal of Audiology* 50,202-208.

30. Jepsen, M.L. and Dau, T. (2011). "Characterizing auditory processing and perception in individual listeners with sensorineural hearing loss", *Journal of the Acoustical Society of America* 129, 262-281.
31. Papakonstantinou, A., Stelcyk, O., and Dau, T. (2011). "Relations between perceptual measures of temporal processing, auditory-evoked brainstem responses and speech intelligibility in noise", *Hearing Research* (1-2), 30-37.
32. Verhulst, S., Harte, J., and Dau, T. (2010). "Temporal adaptation of the click-evoked otoacoustic emission level curve", *Journal of the Acoustical Society of America* 129, 1452-1463.
33. Santurette, S. and Dau, T. (2010). "The role of temporal fine structure information for the low pitch of high-frequency complex tones", *Journal of the Acoustical Society of America* 129, 282-292.
34. Catic, J., Buchholz, J., Gran, F., and Dau, T. (2010). "The effect of a voice activity detector on the speech enhancement performance of the binaural multichannel Wiener filter", *EURASIP Journal on Audio, Speech, and Music Processing*, ID 840294, doi: 10.1155/2010/840294.
35. Nielsen, J.B., and Dau, T. (2010). "Revisiting perceptual compensation for effects of reverberation on speech identification", *Journal of the Acoustical Society of America* 128, 3088-3094.
36. Santurette, S., Poelmans, H. Luts, H., Ghesquiere, P., Wouters, J., and Dau, T. (2010). "Detection and identification of monaural and binaural pitch contours in dyslexic listeners", *Journal of the Association for Research in Otolaryngology* 11, 515-524.
37. Göckler, H.G., Puder, H., Fastl, H., Nordholm, S.E., Dau, T. and Kellermann, W. (2010). "Digital signal processing for Hearing Instruments", *EURASIP Journal on Advances in Signal Processing*, Article ID 898576, doi:10.1155/2009/898576.
38. Christiansen, C., Pedersen, M.S., and Dau, T. (2010). "Prediction of speech intelligibility based on an auditory preprocessing model", *Speech Communication* 52, 678-692.
39. Strelcyk, O., and Dau, T. (2009). "Estimation of cochlear response times using lateralization of frequency-mismatched tones", *Journal of the Acoustical Society of America* 126, 1302-1311.
40. Strelcyk, O., Christoforidis, D., and Dau, T. (2009). "Relation between derived-band auditory brainstem response latencies and behavioral frequency selectivity", *Journal of the Acoustical Society of America* 126, 1878-1888.
41. Harte, J. M., Pigasse, G., and Dau, T. (2009). "Comparison of cochlear delay estimates using otoacoustic emissions and auditory brainstem responses", *Journal of the Acoustical Society of America* 126, 1291-1301.
42. Dau, T., Ewert, S.D., and Oxenham, A.J. (2009). "Auditory stream formation affects comodulation masking release retroactively", *Journal of the Acoustical Society of America* 125, 2182-2188.
43. Nielsen, J.B., and Dau, T. (2009). "Development of a Danish speech intelligibility test", *International Journal of Audiology* 48, 729-741.
44. Strelcyk, O., and Dau, T. (2009). "Relations between frequency selectivity, fine-structure processing, and speech reception in impaired hearing", *Journal of the Acoustical Society of America* 125, 3328-3345.
45. Ewert, S.D., Volmer, J., Dau, T., Verhey, J. (2008) "Amplitude modulation depth discrimination in hearing-impaired and normal-hearing listeners" *Journal of the Acoustical Society of America* 123(5). 3859-3859
46. Verhulst, S., Harte, J.M. and Dau, T. (2008). "Temporal suppression and augmentation of click-evoked otoacoustic emissions", *Hearing Research* 246, 23-35.
47. Jepsen, M.L., Ewert, S.D., and Dau, T. (2008). "A computational model of auditory signal processing and perception", *Journal of the Acoustical Society of America* 124, 422-438.
48. Rupp, A., Sieroka, N., Gutschalk, A., and Dau, T. (2008). "Representation of auditory filter phase characteristics in the cortex of human listeners", *Journal of Neurophysiology*.
49. Thompson, E.R., and Dau, T. (2008). "Binaural processing of modulated interaural level differences", *Journal of the Acoustical Society of America* 123, 1017-1029.
50. Nelson, P.C., Ewert, S.E., Carney, L.H., and Dau, T. (2007). Comparison of level discrimination, increment detection, and comodulation masking release in the audio- and envelope-frequency domains", *Journal of the Acoustical Society of America* 121, 2168-2181.

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51. Piechowiak, T., Ewert, S.D., and Dau, T. (2007). "Modeling comodulation masking release using a equalization-cancellation mechanism", *Journal of the Acoustical Society of America* 121, 2111-2126.
 52. Dicke, U., Ewert, S.D., Dau, T., and Kollmeier, B. (2007). "A neural circuit transforming temporal periodicity information into a rate-based representation in the mammalian auditory system", *Journal of the Acoustical Society of America* 121, 310-326.
 53. Santurette, S. and Dau, T. (2007). "Binaural pitch perception in normal hearing and hearing-impaired listeners", *Hearing Research* 223, 29-47.
 54. Dicke, U. and Dau, T. (2005). "A functional point-neuron model simulating cochlear nucleus ideal onset responses", *Journal of Computational Neuroscience* 19, 239-253.
 55. Junius, D. and Dau, T. (2005). "The influence of cochlear traveling wave and neural adaptation on auditory brainstem responses", *Hearing Research* 205, 53-67.
 56. Müller-Wehlau, M., Mauermann, M., Dau, T., and Kollmeier, B. (2005). "The effects of neural synchronization and peripheral compression on the acoustic-reflex threshold", *Journal of the Acoustical Society of America* 117, 3016-3027.
 57. Oxenham, A.J. and Dau, T. (2004). "Masker-phase effects in normal-hearing and hearing-impaired listeners: Evidence for peripheral compression at low frequencies", *Journal of the Acoustical Society of America* 116, 2248-2257.
 58. Ewert, S.D. and Dau, T. (2004). "External and internal limitations in amplitude-modulation processing", *Journal of the Acoustical Society of America* 116, 478-490.
 59. Fobel, O. and Dau, T. (2004). "Searching for the optimal stimulus eliciting auditory brainstem responses in humans", *Journal of the Acoustical Society of America* 114, 2213-2222.
 60. Verhey, J.L., Ewert, S.D., and Dau, T. (2003). "Modulation masking produced by complex-tone modulators", *Journal of the Acoustical Society of America* 114, 2135-2146.
 61. Dau, T. (2003). "The importance of cochlear processing for the formation of auditory brainstem and frequency following responses", *Journal of the Acoustical Society of America* 113, 936-950.
 62. Wegner, O., and Dau, T. (2002). "Frequency specificity of chirp-evoked auditory brainstem responses", *Journal of the Acoustical Society of America* 111, 1318-1329.
 63. Rupp, A., Uppenkamp, S., Gutschalk, A., Beucker, R., Patterson, R., Dau, T., and Scherg, M. (2002). "On the representation of peripheral neural activity in primary auditory cortex", *Hearing Research* 174, 19-31.
 64. Ewert, S.D., Verhey, J.L., and Dau, T. (2002). "Spectro-temporal processing in the envelope-frequency domain", *Journal of the Acoustical Society of America* 112, 2922-2931.
 65. Oxenham, A. and Dau, T. (2001). "Towards a measure of auditory-filter phase response", *Journal of the Acoustical Society of America* 110, 3169-3178.
 66. Oxenham, A. and Dau, T. (2001). "Reconciling frequency selectivity and phase effects in masking", *Journal of the Acoustical Society of America* 110, 1525-1538.
 67. Oxenham, A. and Dau, T. (2001). "Modulation detection interference: Effects of concurrent and sequential streaming", *Journal of the Acoustical Society of America* 110, 401-408.
 68. Derleth, R.P., Dau, T., and Kollmeier, B. (2001). "Modelling temporal and compressive properties of the normal and impaired auditory system", *Hearing Research* 159, 132-149.
 69. Kohlrausch, A., Fassel, R., and Dau, T. (2000). "The influence of carrier level and frequency on modulation and beat-detection thresholds for sinusoidal carriers", *Journal of the Acoustical Society of America* 108, 723-734.
 70. Ewert, S.D. and Dau, T. (2000). "Characterizing frequency selectivity for envelope fluctuations", *Journal of the Acoustical Society of America* 108, 1181-1196.
 71. Derleth, R.P., and Dau, T. (2000). "On the role of envelope fluctuation processing in spectral masking", *Journal of the Acoustical Society of America* 108, 285-296.

72. Dau, T., Wegner, O., Mellert, V., and Kollmeier, B. (2000). "Auditory brainstem responses with optimized chirp signals compensating basilar-membrane dispersion", *Journal of the Acoustical Society of America* 107, 1530-1540.
73. Verhey, J.L., Dau, T., and Kollmeier, B. (1999). "Within-channel cues in comodulation masking release (CMR): Experiments and model predictions using a modulation-filterbank model", *Journal of the Acoustical Society of America* 106, 2733-2745.
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CONFERENCE ABSTRACTS FROM POSTERS OR TALKS

Author or co-author on over 80 published abstracts mainly from meetings of the Acoustical Society of America (ASA), the Association for Research in Otolaryngology (ARO), and the European Association of Acoustics (EAA).

INVITED TALKS AND COLLOQUIA

1. Dau (2011) "Characterization of individual hearing loss and modelling of the human auditory signal processing", invited talk at the 60 years anniversary of the Odense University Hospital, Dec. 2011.
2. Dau (2011) "Effects of interaural level differences on the externalization of sound", invited talk at the workshop on Binaural hearing with hearing aids and cochlea implants in Wien, Nov. 2011.
3. Dau (2011) "Model-based hearing instrument algorithms and hearing-aid fitting", invited talk at the Hearing Aid Developers Forum, Oldenburg, June 2011.
4. Dau (2011) "Predicting the intelligibility of processed noisy speech based on the SNR in the modulation domain", invited talk at the annual meeting of the Acoustic Society of America, Seattle, May 2011.
5. Dau (2011) "Predicting the intelligibility of processed noisy speech based on the SNR in the modulation domain", invited talk at the annual meeting of the German Acoustic Society (DAGA), Düsseldorf, March 2011.
6. Dau (2010) "Challenges in speech and hearing research", invited talk at a workshop at Oticon A/S, Dec. 2010.
7. Dau (2010) "Recent concepts and challenges in hearing research – and consequences for hearing technology" invited talk at the meeting of the Nordic Audiological Society (NAS), Copenhagen, June 2010.
8. Dau (2010) "Human auditory processing in complex acoustic environments", invited plenary talk at the meeting of the International Commission for Acoustics (ICA), August 2010.
9. Dau (2010) "Mechanisms and models of normal and impaired hearing and their relevance for hearing-aid strategies", invited talk at the annual "Erlanger Kolloquium" organized by Siemens Audiologische Technik, Erlangen, Germany, March 2010.
10. Dau (2010) "Objective and behavioural estimates of cochlear response times in normal-hearing and hearing-impaired listeners", invited talk at the annual meeting of the Deutsche Gesellschaft für Audiologie (DGA), Frankfurt, March 2010.
11. Dau (2010) "Modeling individual hearing impairment with a physiologically-based auditory perception model", invited talk at the annual meeting of the Association for Research in Otolaryngology (ARO), Feb. 2010, Anaheim, CA, USA.
12. Dau (2009) "Recent concepts and challenges in hearing research in humans", invited talk at the workshop of the graduate college "Sense organs, nerve systems, behaviour and communication", September 2009, Kerteminde, Denmark.
13. Dau (2009) "Objective and behavioural estimates of cochlear response times in normal-hearing and hearing-impaired listeners", invited talk at the International Symposium on Hearing, June 2009, Salamanca, Spain.
14. Dau (2009) "Modeling sensorineural hearing loss with a nonlinear auditory front-end", invited talk at the 9th congress of the European Federation of Audiology Societies, June 2009, Tenerife, Spain.
15. Dau (2009) "Recent concepts and challenges in hearing research", plenary talk presented at the combined Dutch/German NAG/DAGA conference, March 2009, Rotterdam, Netherlands.

16. Dau (2008) "Spectro-temporal processing of complex sounds in the human auditory system", invited talk at the workshop on brain rhythms and speech processing, December 2008 in Boston, USA.
17. Dau (2008) "Fine-structure processing, frequency selectivity and speech reception in impaired hearing", presentation at the meeting of the Nordisk Høreapparat Tekniker møde, September 2008, Helsinki, Finland.
18. Dau T. (2008) "Spectro-temporal processing of complex sounds in the human auditory system", guest lecture at the Technical University of Eindhoven, September 2008.
19. Dau T. (2008) "Signal analysis in the human auditory system", presentation at the annual meeting of the British Society of Audiology, September 2008, Nottingham, UK.
20. Dau T. (2008) "Audiological research at the Centre for Applied Hearing Research" Widex, June 2008, Denmark.
21. Dau T. (2008) "Monaural and binaural processing: Overview of audiological and auditory research activities at DTU", April 2008, University of Oldenburg, Germany.
22. Dau T. (2008) "Signalanalyse beim Hören: Von der Nervenzelle zur komplexen Perzeption", invited lecture as part of the *studium generale* about „Perception and reality“, Mainz University, January 2008, Germany.
23. Dau, T. (2008) "Mechanisms and models of normal and impaired hearing", seminar on hearing sciences at Munich University, January 2008, Germany.
24. Dau, T. (2007) "Spectral and temporal processing in normal hearing and hearing-impaired listeners", at the International Symposium on Audiological and Auditory Research (ISAAR), September 2007, Helsingør, Denmark.
25. Dau, T. (2007) "Modeling spectral and temporal masking in the human auditory system", presentation at the 19th International Congress on Acoustics, September 2007, Madrid, Spain.
26. Dau, T. (2007) "Mechanisms and models of normal and impaired hearing", June 2007, at the 8th congress of the European Federation of Audiology Societies, Heidelberg, Germany.
27. Dau, T. (2007) "Mechanisms and models of normal and impaired hearing", May 2007, seminar of the Audio Signal Processing Network in Denmark (ASIP-Net), Technical University of Denmark.
28. Dau, T. (2007) "Signal analysis in the human auditory system", February 2007, colloquium at the Institute for Sound and Vibration Research (ISVR), University of Southampton.
29. Dau, T. (2006) "Auditory processing models and their potential for enhancing the quality of hearing technology", October 2006, seminar organized by "Handelsbanken", Copenhagen.
30. Dau, T. (2006) "Auditory processing models - successes, failures and future implications for hearing aid processing and fitting", September 2006, organized by the "Dansk Teknisk Akustisk Selskab".
31. Dau, T. (2006) "Auditory processing models and their potential for enhancing the quality of hearing technology", August 2006 at the International Hearing Aid Research Conference (IHCON) at Lake Tahoe, USA.
32. Dau, T. (2006) "Research activities and the Centre for Applied Hearing Research", February 2006, meeting of the "29. Nordisk Høreteknikermøde" in Loka Brunn, Sweden.
33. Dau, T. (2005) "Auditory signal processing in the normal and impaired human auditory system", 1st meeting of the GNCollege, organized by GN ReSound, November 2005, Helsingør, DK.
34. Dau, T. (2005) "Effects of grouping on modulation processing and perception in the auditory system", 21. Danavox symposium, August 2005, Kolding, DK, invited by the organizing committee of the symposium.
35. Dau, T. (2005) "Signal analysis in the human auditory system", Nordisk Widex Seminar, organized by Widex A/S, Oslo, April 2005, invited by Widex A/S.
36. Dau, T. (2005) "Signal analysis in the human auditory system", Oticon Research Seminar, Oticon A/S, Hellerup, DK, January 2005, invited by Dr. Bramsløw.
37. Dau, T. (2004). "Signalanalyse im auditorischen System des Menschen", Department of Neurobiology, University of Leipzig, Germany, December 2004, invited by Prof. Rübßen.
38. Dau, T. (2004) "Signal analysis in the auditory system", Seminars on Acoustics and Hearing, Aalborg University, DK, November 2004, invited by Prof. Dorte Hammershøi.

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39. Dau, T. (2004). "Effects of object formation in comodulation and binaural masking release", Summerschool and symposium on Hearing Research in Bad Zwischenahn, Germany, August 2004, invited by Prof. Birger Kollmeier.
 40. Dau, T. (2004) "Models of auditory processing and perception", Annual Meeting of Hearing Pedagogues, Næstved, DK, August 2004, invited by Henrik Mors.
 41. Dau, T. (2004). "The importance of cochlear processing for the formation of auditory brainstem responses", Glostrup Hospital, Clinical Neurophysiological Department, DK, March 2004, invited by Dr. Kjeld Andersen.
 42. Dau, T. (2004). "Spectro-temporal analysis and streaming in the auditory system", 7. Tübinger Wahrnehmungskonferenz (TWK), University of Tübingen, Germany, Feb. 2004, invited by Dr. Petra Arndt.
 43. Dau, T. (2004). "Physikalische Prinzipien beim Hören: Neuronale Mechanismen und Modellbildung", Neurowissenschaftliches Seminar, Technical University Munich, January 2004, invited by PD Dr. Lutz Wiegrebe.
 44. Dau, T. (2003). "Physical principles in auditory processing and perception", Department of Experimental Psychology, University of Cambridge, UK, November 2003, invited by Prof. Brian Moore.
 45. Dau, T. (2003). "Signal analysis in the auditory system", Department of Speech, Music and Hearing, KTH Stockholm, August 2003, invited by Prof. Arne Leijon.
 46. Dau, T. (2003) "Signal analysis in the auditory system", Hearing Seminar, Department of Biology, University of Odense, DK, November 2003, invited by Prof. Christensen-Dalsgaard.
 47. Dau, T. (2003). "Physical principles in auditory processing and perception", Institute of Neuroinformatics, Eidgenössische Technische Hochschule (ETH) Zürich, February 2003, invited by Prof. Stoop.
 48. Dau, T. (2002). "Prinzipien bei der Signalanalyse im auditorischen System", Institute of Information Technology, Ruhr-Universität Bochum, May 2002, invited by Prof. Edenhofer.
 49. Dau, T. (2002). "Models of auditory processing", Meeting of the 28. Nordic Hearing Aid Conference, Oslo, May 2002, invited by Dr. Bisgaard (GN Resound).
 50. Dau, T. (2002). "Modelle der auditorischen Verarbeitung", plenary lecture at the 5th meeting of the *Deutsche Gesellschaft für Audiologie*, February 2002, Zürich.
 51. Dau, T. (2000): "Modeling auditory processing of amplitude modulation", *Seminars in Auditory Physiology and Perception* at the University of Connecticut, Farmington, July 2000, invited by Prof. C. Trahiotis.
 52. Dau, T. (2000): "Modulation detection interference: Effects of concurrent and sequential streaming", *Hearing Research Seminar* at Loyola University, Chicago, June 2000, invited by Prof. W.A. Yost.
 53. Dau, T. (2000): "A model of the effective signal processing in the auditory system", *Ear Club* at the University of California Berkeley's *Weekly Colloquium in the Hearing Sciences*, Berkeley, January 2000, invited by Prof. E. Hafter.
 54. Dau, T. (2000): "Auditory brainstem responses (ABR) with optimized chirp signals compensating basilar-membrane dispersion", *Seminars in Auditory Physiology*, at Eaton Peabody Laboratory, Harvard Medical School, Boston, January 2000, invited by Dr. B. Delgutte.
 55. Dau, T. (1999). "The role of cochlear processing for the formation of auditory brainstem potentials", *Seminars on Hearing*, University of Minnesota, Minneapolis, December 1999, invited by Prof. N.F. Viemeister.
 56. Dau, T. (1999). "Models of temporal processing in the auditory system", *Seminars on Hearing*, University of Minnesota, Minneapolis, December 1999, invited by Prof. N.F. Viemeister.
 57. Dau, T. (1999): "Within- and across channel processing of amplitude modulation", *Seminar in sensory communication* at Research Laboratories of Electronics (RLE), MIT, Cambridge, November 1999, invited by Dr. A.J. Oxenham und Prof. L. Braida.
 58. Dau, T. (1999): "Auditory brainstem responses (ABR) with optimized chirp signals compensating basilar-membrane dispersion", *Hearing Research Seminars* at Boston University Hearing Research Center, Boston, October 1999, invited by Prof. H.S. Colburn.

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59. Dau, T. (1999): "Modeling auditory processing of amplitude modulation: Perception", *Hearing Research Seminars* at Boston University Hearing Research Center, Boston, September 1999, invited by Prof. H.S. Colburn.
 60. Dau, T. (1999). "Signalverarbeitung im auditorischen System des Menschen", *Physiologie des Hörens*, Universität Magdeburg, June 1999, invited by Prof. H. Scheich.
 61. Dau, T. (1999). "Auditory brainstem responses using optimized stimuli compensating for basilar-membrane dispersion", *Kenneth Craik Club Hearing Research Seminar*, University of Cambridge, May 1999, invited by Prof. R. Patterson.
 62. Dau, T. (1999). "Modeling within- and across-channel processing of amplitude modulation", *Journal of the Acoustical Society of America*, Special Session: "Recent Advances in Models of Auditory Processing".
 63. Dau, T. (1998). "Signalverarbeitung im auditorischen System des Menschen", Seminar der Biowissenschaften, Universität Tübingen, November 1998, invited by Prof. Thier.
 64. Dau, T. (1998). "Modell der effektiven Signalverarbeitung im menschlichen Gehör", *Lothar-Cremer-Award talk* at the annual meeting of the Deutsche Gesellschaft für Akustik (DAGA '98), Zürich.
 65. Dau, T. (1997). "Modeling auditory processing of amplitude modulation", *Journal of the Acoustical Society of America* 101, 3061, invited by Prof. N.F. Viemeister.