

This is the program for ISAAR 2007

International Symposium on

**Auditory and Audiological Research**

**ISAAR 2007**

**29-31 August 2007**

**Marienlyst, Helsingør, Denmark**

**Title: "Auditory signal processing in hearing-impaired listeners"**

**Wednesday 29 August**

08:00-10:00 Registration and preparing poster displays

10:00-10:10 Welcome

**Session I: Modeling auditory and speech processing**

10:10-10:45 Alain de Chéveigné (Ecole normale supérieure, Paris, FR)

**Will cochlear implantees ever hear musical pitch?**

10:45-11:20 Ian C. Bruce (McMaster University, Ontario, CAN)

**Modeling the effects of cochlear impairment on the neural representation of speech in the auditory nerve and primary auditory cortex**

11:20-11:55 Volker Hohmann (University of Oldenburg, D)

**Modeling auditory scene analysis by multidimensional statistical filtering may stimulate advances in hearing-aid signal processing**

12:00-13:00 **Lunch**

13:00-13:35 Torsten Dau, Technical University of Denmark, DK

**Spectral and temporal processing in normal-hearing and hearing-impaired listeners**

13:35-14:10 Martin Cooke (University of Sheffield, UK)

**Active hearing, active speaking**

14:10-14:30 Ken W. Grant (Army Audiology and Speech Center, Washington, USA)

**Modeling auditory-visual speech intelligibility**

**Session II: Physiological correlates of hearing impairment and speech processing**

14:30-15:05 Mark E. Lutman (University of Southampton, UK)

**Otoacoustic emissions as an indicator of hearing loss**

15:05-15:20 **Coffee break**

15:20-15:55 Robert Patuzzi (University of Western Australia, AUS)

**Gain, nonlinearity and regulation of the mammalian cochlea**

15:55-16:30 Manuel Don (House Ear Institute, Los Angeles, USA)

**Hearing loss can muddy the waters of otologic disease detection**

16:30-17:05 Shihab A. Shamma (University of Maryland, USA)

**Phoneme representation and classification in primary auditory cortex**

17:05-17:25 Claus Elberling (Oticon, DK)

**Simultaneous multiple stimulation of the ASSR**

17:25-19:00 **Poster session I** ([List](#))

19:00 **Dinner**

20:00-21:00 **Poster session I, continued and refreshments**

**Thursday 30 August****Session III: Perceptual correlates of hearing impairment and auditory processing disorders**

08:45-09:20 Brian C. J. Moore (University of Cambridge, UK)  
**The role of temporal fine structure in normal and impaired hearing**

09:20-09:55 Christian Lorenzi (Ecole normale superieure (ENS), Paris, F)  
**Role of temporal envelope and fine structure cues in speech identification**

09:55-10:30 Andrew J. Oxenham (University of Minnesota, USA)  
**Pitch perception in normal, impaired and electric hearing**

10:30-10:45 **Coffee break**

10:45-11:20 David R. Moore (University of Nottingham, UK)  
**Auditory processing disorder (APD) in children**

11:20-11:40 Kathy Pichora-Fuller (University of Toronto, CAN)  
**Auditory temporal processing deficits in older listeners: A review and overview**

11:40-12:00 Nicole L. Marrone (Boston University, USA)  
**Listening in a multisource environment with and without hearing aids**

12:00-13:00 **Lunch**

**Session IV: Speech perception and attention in adverse conditions**

13:00-13:35 Wouter Dreschler (University of Amsterdam, NL)  
**Diagnosis of impaired speech perception by means of the "Auditory Profile"**

13:35-14:10 Birger Kollmeier (University of Oldenburg, D)  
**Speech reception in noise: How much do we understand?**

14:10-14:45 Barbara Shinn Cunningham (Boston University, USA)  
**Why hearing impairment may degrade selective attention**

14:45-15:00 **Coffee break**

15:00-15:35 Steve Greenberg (International Computer Science Institute, Berkeley, USA)  
**Linguistic scene analysis – synergy is Key**

15:35-15:55 Joshua G. W. Bernstein (Army Audiology and Speech Center, Washington, USA)  
**Frequency dependence of the visual benefit to speech intelligibility in complex noise**

15:55-16:15 Virginia Best (Boston University, USA)  
**Hearing-impaired listeners benefit from spatial and temporal cues in a complex auditory scene**

16:15-18:30 **Poster Session II ([List](#))**

19:00 **Dinner / Banquet**

**Friday 31 August****Session V: Recent concepts in cochlear-implant and hearing-aid processing**

08:30-09:05 Harvey Dillon (National Acoustics Laboratories, Sydney, AUS)  
**Active occlusion reduction: an electronic vent**

09:05-09:40 Fan-Gang Zeng (University of California Irvine, USA)  
**Combining acoustic and electric stimulation to attack the cocktail party**

**problem**

09:40-10:15 Brent W. Edwards (Starkey Hearing Research Center, USA)  
**The interaction of cognitive function with hearing aid signal processing**

10:15-10:30 **Coffee break**

10:30-10:50 Matthias Milczynski (K. U. Leuven, B)  
**Improving pitch perception with cochlear implants for speech and music**

10:50-11:10 Stefan Launer and Ralf-Peter Derleth (Phonak, CH)  
**Towards an objective measure for spatial integrity**

11:10-11:30 Andrew Dittberner (GN Resound Research Group, USA)  
**Binaural auditory steering strategy for microphone transducers in hearing instruments**

11:30-11:50 Sepp Chalupper (Siemens Audiology Engineering Group, D)  
**Effectiveness and efficiency of auditory training**

11:50-12:10 Ole Hau (Widex, DK)  
**Frequency transposition and the effect of training**

12:10-12:20 **Closing remarks**

12:20-13:20 **Lunch**

Updated 10 August 2007  
 by Torben Poulsen

## List of Posters:

### **Variables affecting the Real-Ear-to-Coupler-Difference**

Brian Bech

### **Insights into optimal phonemic compression from a computational model of the auditory periphery**

Ian C. Bruce, Timothy J. Zeyl and Faheem Dinth

### **Effects of Amplitude Ramps on Phonemic Restoration with Compressed Speech**

Deniz Başkent, Cheryl Eiler, Brent Edwards

### **Monaural and binaural subjective modulation transfer functions in simple reverberation**

Eric R. Thompson and Torsten Dau

### **The effects of compression ratio and release-time on loud speech and noise signals, processed by a simulated non-linear hearing aid**

Erik Schmidt

### **Individual cochlear delays estimated with otoacoustic emissions and auditory brainstem measurements**

Gilles Pigasse, James Harte and Torsten Dau

### **Towards Automatic Speech Recognition based on Cochlear Traveling Wave Delay Trajectories**

Tamás Harczos, Gero Szepannek, and Frank Klefenz

### **Single-channel noise suppression based on a statistical source-model for speech**

Niklas Harlander and Volker Hohmann

**Influence of the task of the listener on preference for gain at soft input levels**

Helen Connor and Torben Poulsen

**Effect of talker variability on speech perception by elderly people in reverberation**

Nao Hodoshima and Takayuki Arai,

**Interactive fitting of hearing aids**

R. Houben and W.A. Dreschler,

**Speech intelligibility for normal hearing and hearing-impaired listeners in simulated room acoustic conditions**

I. Arweiler, T. Poulsen, T. Dau

**Auditory brainstem responses elicited by embedded narrowband chirps**

James Harte,

**A new sentence-based test in Danish for estimating speech reception in noise**

Jens Bo Nielsen and Torsten Dau

**Simultaneous reflection masking: dependency on direct sound level and hearing-impairment**

Jörg M. Buchholz

**Impact Sound Perception by Hearing Aid Wearers**

Brent C. Kirkwood

**Directional power ITE hearing aids for moderately severe hearing losses**

Kirsten Dehn,

**The temporal dynamics of pitch perception and what they reveal about processing mechanisms**

Katrin Krumbholz and Nicholas Robert Clark

**Variations in "Adequate" Own-voice Level Used by Speakers and Preferred by Listeners when Communicating Across a Distance**

Søren Laugesen, Niels Søgaard Jensen, Patrick Maas &amp; Claus Nielsen

**Prediction of individual noise susceptibility from inner ear measurements**

Ann-Cathrine Lindblad and Åke Olofsson

**Aided listening performance in complex conditions correlates with performance on cognitive tests rather than with simple tests of audibility**

Thomas Lunner &amp; Elisabet Sundewall-Thorén, Oticon Eriksholm

**Time Constants Of Compression Schemes: Less Is More?**

Matthias Latzel\*, Kirsten Wagener\*\*, Volker Hohmann\*\*

**Interpreting Word-Recognition Data using Lexical and Phonemic Features of the Materials**

Rachel McArdle and Richard H. Wilson

**Modeling spectro-temporal masking in hearing-impaired listeners**

Morten L. Jepsen and Torsten Dau

**An investigation of effective SNR-change through amplitude-compression hearing aids**

Graham Naylor, René Burmand Johannesson, Filip Munch Rønne

**Spatial Unmasking in Aided Hearing-Impaired Listeners and the Need for Training**

Tobias Neher, Thomas Behrens, Louise Kragelund &amp; Anne Specht Petersen

**Impaired auditory functions underlying degraded speech perception in noisy environments**

Olaf Strelcyk and Torsten Dau

**Temporal suppression of long-latency click-evoked otoacoustic emissions**

Sarah Verhulst, James M. Harte, Torsten Dau

**The effects of noise reduction on cognitive effort in normal-hearing and hearing-impaired listeners**

Anastasios Sarampalis, Sridhar Kalluri, Brent Edwards, Ervin Hafter

**The Effect of Interaural Intensity Cues and Expectations of Target Location on Word Identification in Multi-talker Scenes for Younger and Older Adults**

Gurjit Singh, Kathy Pichora-Fuller, Bruce Schneider

**Word Recognition Performance in Competing Sentence and Multitalker Babble Paradigms in Listeners with Hearing Loss**

Sherri L. Smith<sup>1</sup>, Richard H. Wilson<sup>1</sup>, and Rachel A. McArdle<sup>2</sup>

**A tool for fine-tuning of hearing aids**

Sueli A. Caporali, M:Sc, Ph.D., Audiological Research, Widex A/S

**Comparing performance of two high-end hearing aids**

Sueli A. Caporali, M:Sc, Ph.D. Audiological Research, Widex A/S

**Evaluation of Speech Corpus for Assessment of Spatial Unmasking**

Thomas Behrens, Tobias Neher & René Burmand Johannesson

**Mechanisms of within- and across-channel processing in comodulation masking release**

Tobias Piechowiak and Torsten Dau

**Clinical applications of loudness scaling**

M.F.B. van Beurden, M. Boymans, E.J.M. Jansen, W.A. Dreschler

**Toward an individual-specific model of impaired speech intelligibility**

Van Summers, Matthew Makashay, Elena Grassi, Ken W. Grant, Josh Bernstein, Brian E. Walden

**Recognition Performance on Single-speaker Recordings of W-22, NU6, & PB-50 by Listeners with Normal Hearing**

Richard H. Wilson and Rachel McArdle

**Demonstration of a portable system for Auditory Brainstem Recordings, based on pure tone masking difference**

Christian Brandt, Ture Andersen, Torsten Dau and Jakob Christensen-Dalsgaard

**Learning Volume Control for Hearing Aids**

Jos Leenen, Almer van den Berg, Alexander Ypma, Job Geurts and Bert de Vries

**The Complexity of Fitting Hearing Aids**

Bert de Vries, Tjeerd Dijkstra, Alexander Ypma and Jos Leenen

**Assessing sound quality of feedback algorithms with auditory models**

Jeff Bondy, Maureen Coughlin, Bill Whitmer, Andrew Dittberner

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by Torben Poulsen