IEEE Signal Processing WA Chapter Seminar

Time: Wednesday (May 26, 2015) 3:30pm
Venue: Building 314 rm 317, Curtin University, Bentley Campus
This is a free event, open to both IEEE and non-IEEE members.
(Paid visitors parking is available in parking bay area C13)

Title:
Common part modelling of acoustic feedback paths in hearing aids

Presenter:
Henning Schepker

Abstract:
The number of hearing-impaired persons supplied with open-fitting hearing aids has been steadily increasing in recent years. Althoug alleviating problems to the occlusion effect, open-fitting hearing aids are especially prone to acoustic feedback. In order to reduce the acoustic feedback use of adaptive filter is a promising approach, allowing - in theory - for a perfect cancellation of the feedback signal. The convergence speed of adaptive filter depends on the number of adaptive parameters. To reduce the number of adaptive parameters and hence improve the convergence speed in adaptive feedback cancellation algorithms it has been proposed to model the acoustic feedback path as the convolution of two filters: a time-invariant common part and a shorter time-varying variable part. In this talk we present different optimization procedures aiming to estimate the common part as a pole-zero filter from a set of measured acoustic feedback paths. We show results that compare the different optimization procedures with respect to the filter misalignment and the maximum stable gain of the hearing aid.

Biography:
Henning Schepker was born in Bremen, Germany in 1986. He received the B.Eng degree in 2011 from Jade University of Applied Sciences Oldenburg, Germany, and the M.Sc. degree (summa cum laude) in 2012 from University of Oldenburg, Germany, both in Hearing Technology and Audiology. He received awards for both his BEng thesis as well as his MSc thesis.

Since Nov 2012 he is a PhD student in the Signal Processing Group at the Department of Medical Physics and Acoustic of the University of Oldenburg, Germany. His main research focus is on feedback cancellation for open-fitting hearing aids. Other research interests include signal processing for hearing aids and speech and audio applications as well as speech perception.