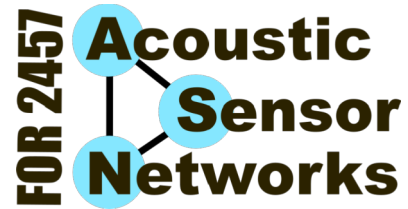


**DFG Midterm Project Workshop
 “Acoustic Sensor Networks”, Building W32,
 October 10, 2018, 9-12am, Univ. Oldenburg,
 Chairs: G. Enzner and R. Häb-Umbach**



Since Jan. 1, 2017, the German Research Foundation (Deutsche Forschungsgemeinschaft) supports the Research Unit DFG FOR 2457 “Acoustic Sensor Networks”, a collaboration of researchers from Universities of Paderborn (Hüb-Umbach, Karl, Schmalenströer), Bochum (Enzner, Martin), and Erlangen-Nürnberg (Kellermann). We, the PIs and the research fellows, invite you the signal processing community to a midterm workshop to share our enthusiasm for the fascinating and challenging topic of signal processing and classification over Acoustic Sensor Networks. The workshop will be held as a satellite event to the ITG Conference on Speech Communication in Oldenburg, Germany.

An acoustic sensor network comprises multiple nodes each with acoustic sensing, sampling and computing capabilities which are further connected in a wireless and cooperative digital communication network. Being spatially distributed, the network can cover a large space and yet have a sensor close to relevant sound sources. The purpose of the network is the meaningful aggregation of sound from various sensors in order to deliver high-fidelity speech output or to classify environmental sounds or acoustic scenes. Applications range from support for smart rooms to enhanced teleconferencing and large-scale environmental monitoring. The Research Unit addresses the fundamental challenges involved, such as communication, synchronization, distributed signal enhancement, classification, and privacy preservation.

The workshop gives an overview of the work carried out in the consortium, the hard- and software frameworks used, and offers us an opportunity to interface with you – the speech and audio experts!

| Time | Presenters | Title |
|-------------|--|---|
| 09:00 | R. Häb-Umbach (coordinator) | Introduction to goals and applications of the DFG research unit |
| 09:30 | S. Goetze (Fraunhofer IDMT, Oldenburg) | Application scenarios for acoustic sensor networks: From ambient assisted living to acoustic monitoring in Industry 4.0 |
| 10:00 | Coffee to Go | |
| | Project Posters (P) and Demonstrations (D) | |
| | J. Schmalenströer, H. Afifi, H. Karl | (P) Distributed acoustic signal processing over wireless acoustic sensor networks (WASNs) |
| | P. Thüne, A. Chinaev, G. Enzner | (P) Acoustic alignment and sampling time synchronization |
| | A. Brendel, M. Bachmann, W. Kellermann | (P) Acoustic signal extraction and enhancement over ASNs |
| 10:00 - | A. Nelus, R. Martin | (P) Acoustic features for privacy & utility in ASN |
| 12:00 | R. Häb-Umbach, J. Ebbers | (P) Acoustic scene and event classification in WASNs |
| | H. Afifi, J. Schmalenströer | (D) MARVELO – A flexible architecture for computational resource allocation in WASNs |
| | A. Chinaev, H. Afifi | (D) Realtime factor of asynchronous audio resampling on R-Pi |
| | M. Bachmann, A. Brendel, J. Schmalenströer | (D) Source-to-microphone distance estimation based on coherent-to-diffuse ratio estimation with Raspberry-Pi computers |
| | J. Ebbers, A. Nelus, H. Afifi | (D) Acoustic scene classification on a Raspberry-Pi network |
| | G. Enzner, P. Thüne | (D) Detrimental effect of autonomous audio A/D conversion on networked acoustic impulse-response identification |