

WORKSHOP

MEASUREMENT TECHNIQUES AND MEASUREMENT DATABASES

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- TOPICS:
1. Middle ear transfer functions (METF): measurement techniques, different kinds of METF, relation to hearing perception, ...
 2. Uncertainties in measurements and their documentation
 3. Documentation and exchange of data

STRUCTURE: Introduction

Presentations/Statements (preliminary list)

- On the Definitions of Stiffness and Transfer Functions - how to measure and interpret it (Albrecht Eiber, Stuttgart)
- High frequency ultrasound and optical coherence tomography measurements of the middle ear response (Thomas Landry, Halifax)
- Correct phase measurement (Sunil Puria, Stanford)
- Expression of uncertainty in measurement (David Pazen, Köln)

Discussion

Further topics, proposed for discussion: Bandwidth of the METF; standing waves in the ear canal; content and structure of measurement data; measurement accuracy

BACKGROUND

In 2007 the research group from Boston published on a standardized procedure to evaluate implantable hearing aids (Rosowski2007 and ASTM_F2504_05). They also provided collected data of middle ear transfer functions (METF). These data had been published by different labs over the last 3 decades and was obtained with different measurement techniques. Many research groups use these data collection as reference data for METF. This emphasizes the need for a common database for reference data.

However, up to now we have these mean data only and sometimes a few individual METF, always presented in diagrams only. The data is also often presented in different scales and units. Due to a lack of sufficient supporting data it is sometimes not clear whether different data really exactly represent the same physical quantities. Moreover, the phase data of METF and of individual METF are constantly missing.

Although METF have been measured for decades, there are still open questions concerning measurement techniques, accuracy, influencing factors and others. The MEMRO meeting is the best stage to discuss those issues.

AIM OF THE WORKSHOP

The workshop should provide a platform to present and exchange information on METF measurement, data documentation and data exchange. It is aimed to all dealing (or just starting) with experimental middle ear research.

As temporal bone specimens are rare and valuable, all published measurement data should be provided in a structure and extent that allows optimal further usage within the research community (e.g. as reference data or for model validation). The session aims to start a process to define common standards in middle ear measurements, to provide reference data via data exchange and a measurement database and to support further usage of published measurement data.