

**Workshop within SPP1665/2:**

**Theory and praxis for simulation of transcranial electric stimulation (tES) using SimBio with outlook to DUNEuro**

**Time:**

**April 07, 2017**

**Location:**

**Seminar-room of the Institute for Biomagnetism and Biosignalanalysis, Malmedyweg 15, 48149 Münster**

**Program:**

**9:00-10:00 Theory: Simulation of transcranial electric stimulation (tDCS, tACS): Finite element method (FEM) model construction, targeting using EEG/MEG source analysis, FEM forward simulation, multi-electrode optimization**

Carsten Wolters

Institute for Biomagnetism and Biosignalanalysis,  
University of Münster

**10:00-10:15 Coffee break**

**10:15-12:00 Praxis of targeting:**

**History of SimBio code**

**Structure of SimBio code**

**Structure of input and output data**

**Good targeting: Validation in multi-layer sphere models of**

**(a)FEM-based EEG forward computations**

**(b)FEM-based EEG inverse computations**

Carsten Wolters

Institute for Biomagnetism and Biosignalanalysis,  
University of Münster

**12:00-13:30 Lunch break**

**13:30-15:00 Praxis of tES optimization:**

**SimBio-FEM based tES forward computations to compute the geometry matrix A**

**Modeling of stimulation patches**

**Matlab code for multi-electrode optimization**

Asad Khan, Sven Wagner and Carsten Wolters

Institute for Biomagnetism and Biosignalanalysis,

University of Münster

**15:00-16:00 Theory and praxis: DUNEuro: A new C++ structured FEM toolbox for modeling in bioelectromagnetism**

Andreas Nüßing (and possibly Christian Engwer in the auditorium)

Institute for Computational und Applied Mathematics and

Institute for Biomagnetism and Biosignalanalysis,

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