

Felix Lucka

Publications

Articles in Preparation

- [1] S.R. Arridge, P. Beard, M.M. Betcke, B.C. Cox, N. Huynh, F. Lucka, E. Zhang. Enhancing Compressed Sensing Photoacoustic Tomography by Simultaneous Motion Estimation.
- [2] F. Lucka, S. Tellen, C.H. Wolters, M. Burger. Sparse Recovery Conditions and Realistic Forward Modeling in EEG/MEG Source Reconstruction.
- [3] Y. Bekhti, F. Lucka, J. Salmon, A. Gramfort. Revisiting majorization-minimization for non-convex sparse regression from a hierarchical Bayesian perspective: application to M/EEG inverse problem.
- [4] N. Huynh, F. Lucka, E. Zhang, M.M. Betcke, S.R. Arridge, P. Beard, B. Cox. Fabry-Perot photoacoustic imaging using a digital micromirror device.

Articles in Review

- [1] V. Rimpiläinen, A. Koulouri, F. Lucka, J.P. Kaipio and C. H. Wolters. Bayesian Modelling of Skull Conductivity Uncertainties in EEG Source Imaging. *Proc. EMBEC 2017*, *arXiv:1703.09031*.
- [2] N. Bissantz, C. Brune, M. Burger, H. Dette, F. Lucka, K. Proksch, F. Wübbeling. Properties and Limitations of Risk Estimators for Choosing Regularization Parameters in Ill-Posed Problems. *Inverse Problems and Imaging*, *arXiv:1701.04970*.

Publications

- [1] N. Huynh, F. Lucka, E.Z. Zhang, M.M. Betcke, S.R. Arridge, P. Beard, and B.T. Cox. Sub-sampled Fabry-Perot photoacoustic scanner for fast 3D imaging. *Proc. SPIE*, 10064:100641Y–5, 2017.
- [2] R. Ellwood, F. Lucka, E.Z. Zhang, P.C. Beard, and B.T. Cox. Photoacoustic imaging with a multi-view Fabry-Pérot scanner. *Proc. SPIE*, 10064:100641F–7, 2017.
- [3] M. Fonseca, E. Malone, F. Lucka, R. Ellwood, L. An, S.R. Arridge, P. Beard, and B.T. Cox. Three-dimensional photoacoustic imaging and inversion for accurate quantification of chromophore distributions. *Proc. SPIE*, 10064:1006415–9, 2017.
- [4] S.R. Arridge, P. Beard, M.M. Betcke, B.T. Cox, N. Huynh, F. Lucka, O. Ogunlade, and E. Zhang. Accelerated high-resolution photoacoustic tomography via compressed sensing. *Physics in Medicine and Biology*, 61(24):8908, 2016.
- [5] S.R. Arridge, M.M. Betcke, B.T. Cox, F. Lucka, and B.E. Treeby. On the adjoint operator in photoacoustic tomography. *Inverse Problems*, 32(11):115012, 2016.
- [6] F. Lucka. Fast Gibbs sampling for high-dimensional Bayesian inversion. *Inverse Problems*, 32(11):115019, 2016.

- [7] L. Fiederer, J. Lahr, J. Vorwerk, F. Lucka, C. Wolters, A. Aertsen, A. Schulze-Bonhage, and T. Ball. Electrical Stimulation of the Human Cerebral Cortex by Extracranial Muscle Activity: Effect Quantification with Intracranial EEG and FEM Simulations. *IEEE Transactions on Biomedical Engineering*, PP(99):1–1, 2016.
- [8] S. Wagner, F. Lucka, J. Vorwerk, C.S. Herrmann, G. Nolte, M. Burger, and C.H. Wolters. Using reciprocity for relating the simulation of transcranial current stimulation to the EEG forward problem. *NeuroImage*, 140:163 – 173, 2016.
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- [12] S.M. Rampersad, A.M. Janssen, F. Lucka, U. Aydin, B. Lanfer, S. Lew, C.H. Wolters, D.F. Stegeman, and T.F. Oostendorp. Simulating Transcranial Direct Current Stimulation With a Detailed Anisotropic Human Head Model. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 22(3):441–452, 2014.
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- [17] S. Pursiainen, F. Lucka, and C.H. Wolters. Complete electrode model in EEG: relationship and differences to the point electrode model. *Physics in Medicine & Biology*, 57(4):999–1017, 2012.
- [18] F. Lucka, S. Pursiainen, M. Burger, and C.H. Wolters. Hierarchical Bayesian Models for EEG Inversion: Depth Localization and Source Separation for Focal Sources in Realistic FE Head Models. In *Biomedical Engineering*, volume 56. De Gruyter, 2011.
- [19] F. Lucka. Hierarchical Bayesian Approaches to the Inverse Problem of EEG/MEG Current Density Reconstruction. Diploma thesis, University of Münster, March 2011.