

List of Publications

Sampsa Pursiainen, June 4th, 2025

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Peer-reviewed scientific articles

- [1] Maryam Samavaki, Santtu Söderholm, Arash Zarrin Nia, and Sampsa Pursiainen. "A coupled diffusion approximation for spatiotemporal hemodynamic response and deoxygenated blood volume fraction in microcirculation". In: *Biomedical Signal Processing and Control* 101 (2025), p. 107183.
- [2] Joonas Lahtinen, Paavo Ronni, Narayan Subramaniam, Alexandra Koulouri, Carsten H Wolters, and Sampsa Pursiainen. "Standardized Kalman Filtering for Time Serial Source Localization of Simultaneous Subcortical and Cortical Brain Activity". In: *Clinical Neurophysiology* 168 (2024), pp. 15–24.
- [3] Joonas Lahtinen, Atena Rezaei, and Sampsa Pursiainen. "Effects of source space resolution, randomization and averaging in focal EEG source localization: Estimation of forward and inverse errors". In: *Journal of Computational and Applied Mathematics* 448 (2024), p. 115922.
- [4] Santtu Söderholm, Joonas Lahtinen, Carsten H Wolters, and Sampsa Pursiainen. "The effects of peeling on finite element method-based EEG source reconstruction". In: *Biomedical Signal Processing and Control* 89 (2024), p. 105695.
- [5] Maryam Samavaki, Santtu Söderholm, Arash Zarrin Nia, and Sampsa Pursiainen. "Modeling of blood flow in cerebral arterial circulation and its dynamic impact on electrical conductivity in a realistic multi-compartment head model". In: *Computer Methods and Programs in Biomedicine* 244 (2024), p. 107983.
- [6] Joonas Lahtinen, Alexandra Koulouri, Stefan Rampp, Jörg Wellmer, Carsten H Wolters, and Sampsa Pursiainen. "Standardized hierarchical adaptive Lp regression for noise robust focal epilepsy source reconstructions". In: *Clinical Neurophysiology* 159 (2024), pp. 24–40.
- [7] Fernando Galaz Prieto, Maryam Samavaki, and Sampsa Pursiainen. "Lattice layout and optimizer effect analysis for generating optimal transcranial electrical stimulation (tES) montages through the metaheuristic L1L1 method". In: *Frontiers in Human Neuroscience* 18 (2024), p. 1201574.
- [8] Liisa-Ida Sorsa, Yusuf Oluwatoki Yusuf, Astrid Dufaure, Jean-Michel Geffrin, Christelle Eyraud, and Sampsa Pursiainen. "Imaging of the internal structure of an asteroid analogue from quasi-monostatic microwave measurement data-II. The time domain approach". In: *Astronomy & Astrophysics* 674 (2023), A73.

- [9] A Dufaure, C Eyraud, L-I Sorsa, YO Yusuf, S Pursiainen, and J-M Geffrin. "Imaging of the internal structure of an asteroid analogue from quasi-monostatic microwave measurement data-I. The frequency domain approach". In: *Astronomy & Astrophysics* 674 (2023), A72.
- [10] Tuomo Poutanen, Sampsa Pursiainen, and Tim Länsivaara. "Excessive load". In: *Frontiers in Built Environment* 9 (2023), p. 1204877.
- [11] Tim Erdrügger, Andreas Westhoff, Malte Höltershinken, Jan-Ole Radecke, Yvonne Buscher-möhle, Alena Buyx, Fabrice Wallois, Sampsa Pursiainen, Joachim Gross, Rebekka Lencer, et al. "CutFEM forward modeling for EEG source analysis". In: *Frontiers in Human Neuroscience* 17 (2023), p. 1216758.
- [12] Maryam Samavaki, Yusuf Oluwatoki Yusuf, Arash Zarrin Nia, Santtu Söderholm, Joonas Lahtinen, Fernando Galaz Prieto, and Sampsa Pursiainen. "Pressure-Poisson equation in numerical simulation of cerebral arterial circulation and its effect on the electrical conductivity of the brain". In: *Computer Methods and Programs in Biomedicine* 242 (2023), p. 107844.
- [13] Fernando Galaz Prieto, Joonas Lahtinen, Maryam Samavaki, and Sampsa Pursiainen. "Multi-compartment head modeling in EEG: Unstructured boundary-fitted tetra meshing with subcortical structures". In: *Plos one* 18.9 (2023), e0290715.
- [14] Joonas Lahtinen, Fernando Moura, Maryam Samavaki, Samuli Siltanen, and Sampsa Pursiainen. "In silico study of the effects of cerebral circulation on source localization using a dynamical anatomical atlas of the human head". In: *Journal of neural engineering* 20.2 (2023), p. 026005.
- [15] Joonas Lahtinen, Alexandra Koulouri, Atena Rezaei, and Sampsa Pursiainen. "Conditionally exponential prior in focal near-and far-field EEG source localization via randomized multiresolution scanning (ramus)". In: *Journal of Mathematical Imaging and Vision* 64.6 (2022), pp. 587–608.
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- [18] Fernando Galaz Prieto, Atena Rezaei, Maryam Samavaki, and Sampsa Pursiainen. "L1-norm vs. L2-norm fitting in optimizing focal multi-channel tES stimulation: linear and semidefinite programming vs. weighted least squares". In: *Computer Methods and Programs in Biomedicine* 226 (2022), p. 107084.
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- [21] Sophie Schrader, Andreas Westhoff, Maria Carla Piastra, Tuuli Miinalainen, Sampsa Pursiainen, Johannes Vorwerk, Heinrich Brinck, Carsten H Wolters, and Christian Engwer. "DUNEuro—A software toolbox for forward modeling in bioelectromagnetism". In: *PLoS one* 16.6 (2021), e0252431.
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- [38] Mika Takala, Patrick Bambach, Jakob Deller, Esa Vilenius, Manfred Wittig, Harald Lentz, Hans Martin Braun, Mikko Kaasalainen, and Sampsa Pursiainen. "Far-field inversion for the deep interior scanning cubesat". In: *IEEE Transactions on Aerospace and Electronic Systems* 55.4 (2018), pp. 1683–1697.
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- [53] Felix Lucka, Sampsa Pursiainen, Martin Burger, and Carsten H Wolters. "Hierarchical Bayesian inference for the EEG inverse problem using realistic FE head models: depth localization and source separation for focal primary currents". In: *NeuroImage* 61.4 (2012), pp. 1364-1382.
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Non-refereed scientific articles

- [1] Yusuf Oluwatoki Yusuf, Astrid Dufaure, Liisa-Ida Sorsa, Jean-Michel Geffrin, Christelle Eyraud, and Sampsa Pursiainen. "Interior Structure of Small Solar System Bodies: Exploring Computational and Experimental Imaging Techniques". In: *AAS/Division for Planetary Sciences Meeting Abstracts*. Vol. 56. 8. 2024, pp. 202–03.
- [2] Mika Takala, Valentin Tertius Bickel, Patrick Bambach, Hans Martin Braun, and Sampsa Pursiainen. "The Stepped Frequency GPR: A Proposal to investigate the Lunar Subsurface." In: *Geophysical Research Abstracts*. Vol. 21. 2019.
- [3] Jakob Deller, Esa Vilenius, Olaf Roders, Özgür Karatekin, Sampsa Pursiainen, Koji Wada, Paolo Tortora, Tomáš Kohout, and Patrick Bambach. "Asteroid In-situ Interior Investigation-3way: Understanding the formation processes and evolution of small solar system bodies". In: *EPSC-DPS Joint Meeting 2019*. Vol. 2019. 2019, EPSC–DPS2019.
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