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List of Publications

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Articles in refereed scientific journals

1. Mozumder M, Hauptmann A, Nissilä I, Arridge SR, Tarvainen T, A model-based iterative learning approach for diffuse optical tomography, *IEEE Transactions on Medical Imaging*, Submitted.
2. Sahlström T, Pulkkinen A, Leskinen J, Tarvainen T, Computationally Efficient Forward Operator for Photoacoustic Tomography Based on Coordinate Transformations*, IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, Accepted for Publication.
3. Lunz S, Hauptmann A, Tarvainen T, Schönlieb C-B, Arridge S, On learned operator correction in inverse problems, *SIAM Journal on Imaging Sciences*, 14(1):92-127, 2021.
4. Mozumder M, Tarvainen T, Evaluation of temporal moments and Fourier transformed data in time-domain diffuse optical tomography, *Journal of the Optical Society of America A,* 37(12):1845-1856, 2020.
5. Leino A, Lunttila T, Mozumder M, Pulkkinen A, Tarvainen T, Perturbation Monte Carlo method for quantitative photoacoustic tomography, *IEEE Transactions on Medical Imaging*, 39(19):2985-2995, 2020.
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Book chapters

1. Tarvainen T, Quantitative photoacoustic tomography in Bayesian framework, In R. Ramlau and O. Scherzer Eds., *Radon Transform -The First 100 Years and Beyond*, De Gruyter, ISBN 978-3-11-055941-5 (print) 978-3-11-056085-5 (PDF) 978-3-11-055951-4 (EPUB), pages 239-271, 2019.
2. Vauhkonen M, Tarvainen T, Lähivaara T, Inverse Problems, In S. Pohjolainen, Editor, *Mathematical Modelling,* Springer, pages 207-227, 2016.
3. Arridge SR, Kaipio JP, Kolehmainen V, Tarvainen T, Optical Imaging*,* In O. Scherzer, Editor, *Handbook of Mathematical Methods in Imaging*, Springer Reference, Springer (New York), pages 735-780, (DOI: 10.1007/978-0-387-92920-0_17), 2011.

Articles in professional journals

1. Tarvainen T, Ihmisen kuvantaminen valoa käyttäen, In *Arkhimedes – Journal of Physics and Mathematics,* The Finnish Physical Society, the Finnish Mathematical Society and the Physical Society in Finland, 2:14-19, 2016.

Theses (monographs)

1. Tarvainen T, Computational Methods for Light Transport in Optical Tomography, PhD thesis, University of Kuopio, Kuopio, Finland, 2006.
2. Vilhunen T, Determining Dielectric Properties of Biological Tissue (In Finnish), MSc thesis, University of Kuopio, Kuopio, Finland, 2000.

Invention disclosures

1. MATLAB-toolbox for simulating light transport using Monte Carlo method, UEF Dno 323.02.07.03.01.18, 26.2.2018.
2. Photoacoustic tomography system based on LED illumination, UEF Dno 407/02.07.03.01/2018, 19.3.2018.

Software

1. ValoMC - A Monte Carlo software for simulating light transport https://inverselight.github.io/ValoMC/