

## 10 Selected Publications

1. Mahnaz Khalili, Peter Göransson, Jan S. Hesthaven, Antti Pasanen, Marko Vauhkonen, and Timo Lähivaara. Monitoring of water volume in a porous reservoir using seismic data: A 3D simulation study. **Journal of Applied Geophysics**, **229:105453**, 2024.
2. Timo Lähivaara, William Hall, Matti Malinen, Dale Ota, Vijaya Shankar, and Peter Monk. A high-order Ultraweak Variational Formulation for electromagnetic waves utilizing curved elements. **IEEE Transactions on Antennas and Propagation**, **72(5):4440-4453**, 2024.
3. Timo Lähivaara, Peter Monk, and Virginia Selgas. The Time Domain Linear Sampling Method for Determining the Shape of a Scatterer using Electromagnetic Waves, **Computational Methods in Applied Mathematics**, **22(4):889-913**, 2022.
4. Janne Koponen, Timo Lähivaara, Jari Kaipio, and Marko Vauhkonen. Model reduction in acoustic inversion by artificial neural network. **Journal of Acoustical Society of America**, **150**, 3435-3444, 2021.
5. Nicholas F. Dudley Ward, Simon Eveson, and Timo Lähivaara. A Discontinuous Galerkin method for three-dimensional poroelastic wave propagation: forward and adjoint problems. **Computational Methods and Function Theory**, **21:737-777**, 2021.
6. Kenneth Muhumuza, Lassi Roininen, Janne M.J. Huttunen, and Timo Lähivaara. A Bayesian-based approach to improving acoustic Born waveform inversion of seismic data for viscoelastic media. **Inverse problems**, **36:075010**, 2020.
7. Timo Lähivaara, Alireza Malehmir, Antti Pasanen, Leo Kärkkäinen, Janne M.J. Huttunen, Jan S. Hesthaven. Estimation of groundwater storage from seismic data using deep learning. **Geophysical Prospecting** **67(8):2115-2126**, 2019.
8. Timo Lähivaara, Leo Kärkkäinen, Janne M.J. Huttunen, Jan S. Hesthaven. Deep convolutional neural networks for estimating porous material parameters with ultrasound tomography. **Journal of Acoustical Society of America**, **143(2):1148-1158**, 2018.
9. Nicholas F. Dudley Ward, Timo Lähivaara, and Simon Eveson. A discontinuous Galerkin method for poroelastic wave propagation: The two-dimensional case. **Journal of Computational Physics**, **350:690-727**, 2017.
10. Timo Lähivaara, Nicholas F. Dudley Ward, Tomi Huttunen, Zara Rawlinson, and Jari P. Kaipio. Estimation of aquifer dimensions from seismic signals in the presence of material and source and model uncertainties. **Geophysical Journal International**, **200(3):1662-1675**, 2015.