

Stanford

Robert Clapp

Sr Research Engineer

Geophysics

Bio

ACADEMIC APPOINTMENTS

- Sr Research Engineer, Geophysics

Teaching

COURSES

2024-25

- Reflection Seismology: GEOPHYS 385A (Aut)

2023-24

- Basic Earth Imaging: GEOPHYS 188, GEOPHYS 210 (Win)
- Environmental Soundings Image Estimation: GEOPHYS 211 (Aut)
- Reflection Seismology: GEOPHYS 385A (Aut, Win, Spr)

2022-23

- Environmental Soundings Image Estimation: GEOPHYS 211 (Win)
- Introduction to Computational Earth Sciences: GEOPHYS 257 (Win)
- Reflection Seismology: GEOPHYS 385A (Aut, Win, Spr, Sum)

2021-22

- Environmental Soundings Image Estimation: GEOPHYS 211 (Win)
- Reflection Seismology: GEOPHYS 385A (Aut, Win, Spr, Sum)

STANFORD ADVISEES

Doctoral Dissertation Co-Advisor (NonAC)

Min Jun Park

Publications

PUBLICATIONS

- **Applied 3D salt body reconstruction using shape optimization with level sets** *GEOPHYSICS*
Dahlke, T., Biondi, B., Clapp, R.
2020; 85 (5): R437–R446
- **A pipeline approach for three dimensional time-domain finite-difference multi-parameter waveform inversion on GPUs** *COMPUTERS & GEOSCIENCES*
Le, H., Clapp, R. G., Levin, S. A., Biondi, B.
2020; 140

- **Integrated VTI model building with seismic data, geologic information, and rock-physics modeling - Part 1: Theory and synthetic test** *GEOPHYSICS*
Li, Y., Biondi, B., Clapp, R., Nichols, D.
2016; 81 (5): C177-C191
- **Integrated VTI model building with seismic data, geologic information, and rock-physics modeling - Part 2: Field data test** *GEOPHYSICS*
Li, Y., Biondi, B., Clapp, R., Nichols, D.
2016; 81 (5): C205-C218
- **Equivalent accuracy at a fraction of the cost: Overcoming temporal dispersion** *GEOPHYSICS*
Li, Y. E., Wong, M., Clapp, R.
2016; 81 (5): T189-T196
- **Random boundary condition for memory-efficient waveform inversion gradient computation** *GEOPHYSICS*
Shen, X., Clapp, R. G.
2015; 80 (6): R351-R359
- **Time-lapse seismic noise correlation tomography at Valhall** *GEOPHYSICAL RESEARCH LETTERS*
de Ridder, S. A., Biondi, B. L., Clapp, R. G.
2014; 41 (17): 6116-6122
- **Wave-equation migration velocity analysis for VTI models** *GEOPHYSICS*
Li, Y., Biondi, B., Clapp, R., Nichols, D.
2014; 79 (3): WA59-WA68
- **Salt delineation via interpreter-guided 3D seismic image segmentation** *INTERPRETATION-A JOURNAL OF SUBSURFACE CHARACTERIZATION*
Halpert, A. D., Clapp, R. G., Biondi, B.
2014; 2 (2): T79-?
- **SCALING REVERSE TIME MIGRATION PERFORMANCE THROUGH RECONFIGURABLE DATAFLOW ENGINES** *IEEE MICRO*
Fu, H., Gan, L., Clapp, R. G., Ruan, H., Pell, O., Mencer, O., Flynn, M., Huang, X., Yang, G.
2014; 34 (1): 30-40
- **Revisiting finite difference and spectral migration methods on diverse parallel architectures** *COMPUTERS & GEOSCIENCES*
Fu, H., Clapp, R. G., Lindtjorn, O., Wei, T., Yang, G.
2012; 43: 187-196
- **BEYOND TRADITIONAL MICROPROCESSORS FOR GEOSCIENCE HIGH-PERFORMANCE COMPUTING APPLICATIONS** *IEEE MICRO*
Lindtjorn, O., Clapp, R. G., Pell, O., Mencer, O., Flynn, M. J., Fu, H.
2011; 31 (2): 41-49
- **Eliminating the Memory Bottleneck: An FPGA-based Solution for 3D Reverse Time Migration** *19th Annual ACM International Symposium on Field-Programmable Gate Arrays*
Fu, H., Clapp, R. G.
ASSOC COMPUTING MACHINERY.2011: 65-74
- **3D plane-wave migration in tilted coordinates: A field data example** *GEOPHYSICS*
Shan, G., Clapp, R., Biondi, B.
2009; 74 (6): WCA199-WCA209
- **Imaging by target-oriented wave-equation inversion** *GEOPHYSICS*
Valenciano, A. A., Biondi, B. L., Clapp, R. G.
2009; 74 (6): WCA109-WCA120
- **Application of image segmentation to tracking 3D salt boundaries** *GEOPHYSICS*
Lomask, J., Clapp, R. G., Biondi, B.
2007; 72 (4): P47-P56
- **Nonlinear pairwise alignment of seismic traces** *GEOPHYSICS*
Liner, C. L., Clapp, R. G.
2004; 69 (6): 1552-1559

- **Incorporating geologic information into reflection tomography** *GEOPHYSICS*
Clapp, R. G., Biondi, B., Claerbout, J. F.
2004; 69 (2): 533-546
- **Iterative resolution estimation in least-squares Kirchhoff migration** *GEOPHYSICAL PROSPECTING*
Fomel, S., Berryman, J. G., Clapp, R. G., Prucha, M.
2002; 50 (6): 577-588