

## References

- [1] Ali M. Alfaraj, Rajiv Kumar, and Felix J. Herrmann. Reconstruction of S-waves from low-cost randomized and simultaneous acquisition by joint sparse inversion. In *SEG Technical Program Expanded Abstracts*, pages 2533–2538, 09 2017. (SEG, Houston).
- [2] Ali M. Alfaraj, Rajiv Kumar, and Felix J. Herrmann. Shear wave reconstruction from low cost randomized acquisition. In *EAGE Annual Conference Proceedings*, 06 2017. (EAGE, Paris).
- [3] Ali M. Alfaraj, Rajiv Kumar, and Felix J. Herrmann. Automatic statics and residual statics correction with low-rank approximation. In *EAGE Annual Conference Proceedings*, 06 2018. (EAGE, Copenhagen).
- [4] Ali M. Alfaraj, Rajiv Kumar, and Felix J. Herrmann. Seismic waveform inversion using decomposed one-way wavefields. 2018. Accepted for SEG 2018.
- [5] Fadhel Abbas Alhashim. Seismic data processing with the parallel windowed curvelet transform. Master’s thesis, The University of British Columbia, Vancouver, 08 2009. (MSc).
- [6] Mufeed H. AlMatar. Estimation of surface-free data by curvelet-domain matched filtering and sparse inversion. Master’s thesis, The University of British Columbia, Vancouver, 12 2010. (MSc).
- [7] Mufeed H. AlMatar, Tim T.Y. Lin, and Felix J. Herrmann. Estimation of surface-free data by curvelet-domain matched filtering and sparse inversion. Technical Report TR-EOAS-2010-1, Department of Earth and Ocean Sciences, University of British Columbia, Vancouver, 2010.
- [8] Aleksandr Y. Aravkin, James V. Burke, Felix J. Herrmann, and Tristan van Leeuwen. A nonlinear sparsity promoting formulation and algorithm for full waveform inversion. In *EAGE Annual Conference Proceedings*, 05 2011.
- [9] Aleksandr Y. Aravkin, Michael P. Friedlander, Felix J. Herrmann, and Tristan van Leeuwen. Robust inversion, dimensionality reduction, and randomized sampling. *Mathematical Programming*, 134(1):101–125, 08 2012.
- [10] Aleksandr Y. Aravkin, Michael P. Friedlander, and Tristan van Leeuwen. Robust inversion via semistochastic dimensionality reduction. In *ICASSP*, pages 5245–5248. ICASSP, 2012.
- [11] Aleksandr Y. Aravkin, Felix J. Herrmann, Tristan van Leeuwen, James V. Burke, and Xiang Li. Full waveform inversion with compressive updates. In *SIAM. SIAM CS&E 2011*, 2011.

- [12] Aleksandr Y. Aravkin, Felix J. Herrmann, Tristan van Leeuwen, and Xiang Li. Fast full-waveform inversion with compressive sensing. In *SEG Technical Program Expanded Abstracts*, 2011.
- [13] Aleksandr Y. Aravkin, Rajiv Kumar, Hassan Mansour, Ben Recht, and Felix J. Herrmann. An SVD-free Pareto curve approach to rank minimization. Technical Report TR-EOAS-2013-2, UBC, 02 2013.
- [14] Aleksandr Y. Aravkin, Rajiv Kumar, Hassan Mansour, Ben Recht, and Felix J. Herrmann. Fast methods for denoising matrix completion formulations, with applications to robust seismic data interpolation. *SIAM Journal on Scientific Computing*, 36(5):S237–S266, 10 2014. (SISC).
- [15] Aleksandr Y. Aravkin, Xiang Li, and Felix J. Herrmann. Fast seismic imaging for marine data. In *ICASSP*. ICASSP, 2012.
- [16] Aleksandr Y. Aravkin and Tristan van Leeuwen. Estimating nuisance parameters in inverse problems. *Inverse Problems*, 28(11), 10 2012.
- [17] Aleksandr Y. Aravkin, Tristan van Leeuwen, Kenneth Bube, and Felix J. Herrmann. On non-uniqueness of the Student’s t-formulation for linear inverse problems. In *SEG Technical Program Expanded Abstracts*, volume 31, pages 1–5. SEG, 11 2012.
- [18] Aleksandr Y. Aravkin, Tristan van Leeuwen, James V. Burke, and Felix J. Herrmann. Sparsity promoting formulations and algorithms for FWI. In *EAGE Annual Conference Proceedings*, 2011.
- [19] Aleksandr Y. Aravkin, Tristan van Leeuwen, James V. Burke, and Felix J. Herrmann. Sparsity promoting formulations and algorithms for FWI. In *ICIAM*. ICIAM 2011, 07 2011. Presented at AMP Medical and Seismic Imaging, 2011, Vancouver BC.
- [20] Aleksandr Y. Aravkin, Tristan van Leeuwen, Henri Calandra, and Felix J. Herrmann. Source estimation for frequency-domain FWI with robust penalties. In *EAGE Annual Conference Proceedings*, 06 2012.
- [21] Aleksandr Y. Aravkin, Tristan van Leeuwen, and Felix J. Herrmann. Robust full-waveform inversion using the Student’s t-distribution. In *SEG Technical Program Expanded Abstracts*, volume 30, pages 2669–2673. SEG, 09 2011.
- [22] Aleksandr Y. Aravkin, Tristan van Leeuwen, and Felix J. Herrmann. Robust FWI using Student’s t-distribution. In *ICIAM*. ICIAM 2011, 07 2011.
- [23] Aleksandr Y. Aravkin, Tristan van Leeuwen, and Ning Tu. Sparse seismic imaging using variable projection. In *ICASSP*, 05 2013.

- [24] Y. Bernabé, U. Mok, B. Evans, and Felix J. Herrmann. Permeability and storativity of binary mixtures of high-and low-porosity materials. *Journal of Geophysical Research: Solid Earth*, 109:B12207, 12 2004.
- [25] Moritz Beyreuther, Jamin Cristall, and Felix J. Herrmann. Computation of time-lapse differences with 3-D directional frames. In *SEG Technical Program Expanded Abstracts*, volume 24, pages 2488–2491. SEG, 2005.
- [26] Moritz Beyreuther, Felix J. Herrmann, and Jamin Cristall. Curvelet denoising of 4-D seismic. In *EAGE Annual Conference Proceedings*, 06 2004.
- [27] Ben B. Bougher. Machine learning applications to geophysical data analysis. Master’s thesis, The University of British Columbia, Vancouver, 08 2016. (MSc).
- [28] Ben B. Bougher and Felix J. Herrmann. Prediction of stratigraphic units from spectral co-occurrence coefficients of well logs. In *CSEG Annual Conference Proceedings*, 05 2015. (CSEG, Calgary).
- [29] Ben B. Bougher and Felix J. Herrmann. Ava classification as an unsupervised machine-learning problem. In *SEG Technical Program Expanded Abstracts*, pages 553–556, 10 2016. (SEG, Dallas).
- [30] Ben B. Bougher and Felix J. Herrmann. Using the scattering transform to predict stratigraphic units from well logs. *CSEG Recorder*, 41(1):22–25, 01 2016. (CSEG Recorder).
- [31] Andrew J. Calvert, Ian Hanlon, Mostafa Javanmehri, Rajiv Kumar, Tristan van Leeuwen, Xiang Li, Brendan R. Smithyman, Eric Takam Takougang, Haneet Wason, and Felix J. Herrmann. FWI from the West Coasts: lessons learned from ”gulf of mexico imaging challenges: What can full waveform inversion achieve?”. In *SEG Workshop on FWI; Las Vegas*. SEG, 2012.
- [32] Xintao Chai, Mengmeng Yang, Philipp A. Witte, Rongrong Wang, Zhi-long Fang, and Felix J. Herrmann. A linearized Bregman method for compressive waveform inversion. In *SEG Technical Program Expanded Abstracts*, pages 1449–1454, 10 2016. (SEG, Dallas).
- [33] Jamin Cristall, Moritz Beyreuther, and Felix J. Herrmann. Curvelet processing and imaging: 4-D adaptive subtraction. In *CSEG Annual Conference Proceedings*. CSEG, 05 2004.
- [34] Curt Da Silva and Felix J. Herrmann. Matrix probing and simultaneous sources: a new approach for preconditioning the Hessian. In *EAGE Annual Conference Proceedings*, 06 2012.
- [35] Emmanouil Daskalakis, Rachel Kuske, and Felix J. Herrmann. Developments in the direction of solving extremely large problems in Geophysics. In *SEG Technical Program Expanded Abstracts*, pages 4375–4378, 09 2017. (SEG, Houston).

- [36] Marcos de Aguiar, Gerard Gorman, Felix J. Herrmann, Navjot Kukreja, Michael Lange, Mathias Louboutin, and Felipe Vieira Zacarias. Devito: fast finite difference computation. In *Super Computing (SC16)*, 11 2016. (Super Computing, Utah).
- [37] Catherine Dupuis. Seismic singularity characterization with redundant dictionaries. Master’s thesis, The University of British Columbia, Vancouver, 07 2005. (MSc).
- [38] Yogi A. Erlangga and Felix J. Herrmann. An iterative multilevel method for computing wavefields in frequency-domain seismic inversion. In *SEG Technical Program Expanded Abstracts*, volume 27, pages 1957–1960. SEG, 11 2008.
- [39] Yogi A. Erlangga and Felix J. Herrmann. Migration with implicit solvers for the time-harmonic Helmholtz equation. In *EAGE Annual Conference Proceedings*, 06 2009.
- [40] Yogi A. Erlangga and Felix J. Herrmann. Seismic waveform inversion with Gauss-Newton-Krylov method. In *SEG Technical Program Expanded Abstracts*, volume 28, pages 2357–2361. SEG, 10 2009.
- [41] R. A. Eso, S. Napier, Felix J. Herrmann, and D. W. Oldenburg. Iterative reconstruction algorithm for non-linear operators. In *SEG Technical Program Expanded Abstracts*, volume 27, pages 579–583. SEG, 11 2008.
- [42] Ernie Esser. Solving DC programs that promote group 1-sparsity. In *SIAM Conference on Imaging Science*, 05 2014. (SIAM Conference on Imaging Science).
- [43] Ernie Esser. Some lifting notes. Technical Report TR-EOAS-2014-1, UBC, 02 2014. written on February 15, 2014.
- [44] Ernie Esser, Lluís Guasch, and Felix J. Herrmann. Automatic salt flooding with hinged FWI. In *SEG Workshop on Subsalt model buiding long to short wavelengths; New Orleans*, 10 2015. (SEG, New Orleans).
- [45] Ernie Esser, Lluís Guasch, Felix J. Herrmann, and Mike Warner. Constrained waveform inversion for automatic salt flooding. *The Leading Edge*, 35(3):235–239, 03 2016. (The Leading Edge).
- [46] Ernie Esser, Lluís Guasch, Tristan van Leeuwen, Aleksandr Y. Aravkin, and Felix J. Herrmann. Automatic salt delineation — Wavefield Reconstruction Inversion with convex constraints. In *SEG Technical Program Expanded Abstracts*, pages 1337–1343, 10 2015. (SEG, New Orleans).
- [47] Ernie Esser, Lluís Guasch, Tristan van Leeuwen, Aleksandr Y. Aravkin, and Felix J. Herrmann. Total-variation regularization strategies in full-waveform inversion. *SIAM Journal on Imaging Sciences*, 11(1):376–406, 2018. (SIAM Journal on Imaging Sciences).

- [48] Ernie Esser, Lluís Guasch, Tristan van Leeuwen, Aleksandr Y. Aravkin, and Felix J. Herrmann. Total variation regularization strategies in full waveform inversion for improving robustness to noise, limited data and poor initializations. Technical Report TR-EOAS-2015-5, UBC, 06 2015.
- [49] Ernie Esser and Felix J. Herrmann. Application of a convex phase retrieval method to blind seismic deconvolution. In *EAGE Annual Conference Proceedings*, 06 2014.
- [50] Ernie Esser, Tim T.Y. Lin, Rongrong Wang, and Felix J. Herrmann. A lifted  $\ell_1/\ell_2$  constraint for sparse blind deconvolution. In *EAGE Annual Conference Proceedings*, 06 2015. (EAGE, Madrid).
- [51] Ernie Esser, Tristan van Leeuwen, Aleksandr Y. Aravkin, and Felix J. Herrmann. A scaled gradient projection method for total variation regularized full waveform inversion. Technical Report TR-EOAS-2014-2, UBC, 04 2014.
- [52] Ernie Esser, Rongrong Wang, Tim T.Y. Lin, and Felix J. Herrmann. Resolving scaling ambiguities with the  $\ell_1/\ell_2$  norm in a blind deconvolution problem with feedback. In *IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing*, pages 365–368, 12 2015. (IEEE CAMSAP Workshop, Cancún, Mexico).
- [53] Zhilong Fang. *Source estimation and uncertainty quantification for wave-equation based seismic imaging and inversion*. PhD thesis, The University of British Columbia, Vancouver, 04 2018. (PhD).
- [54] Zhilong Fang, Tim Burgess, and Felix J. Herrmann. Stochastic optimization and its application to seismic inversion. In *Inaugural Full-Waveform Inversion Workshop*, 08-09 2015. (Natal, Brazil).
- [55] Zhilong Fang and Felix J. Herrmann. A stochastic quasi-newton MCMC method for uncertainty quantification of full-waveform inversion. Technical Report TR-EOAS-2014-6, UBC, 04 2014.
- [56] Zhilong Fang and Felix J. Herrmann. Source estimation for Wavefield Reconstruction Inversion. In *EAGE Annual Conference Proceedings*, 06 2015. (EAGE, Madrid).
- [57] Zhilong Fang and Felix J. Herrmann. Wavefield Reconstruction Inversion with source estimation and its application to 2014 Chevron synthetic blind test dataset. In *Inaugural Full-Waveform Inversion Workshop*, 08-09 2015. (Natal, Brazil).
- [58] Zhilong Fang, Chia Ying Lee, Curt Da Silva, Felix J. Herrmann, and Rachel Kuske. Uncertainty quantification for Wavefield Reconstruction Inversion. In *EAGE Annual Conference Proceedings*, 06 2015. (EAGE, Madrid).

- [59] Zhilong Fang, Chia Ying Lee, Curt Da Silva, Felix J. Herrmann, and Rachel Kuske. Uncertainty quantification for Wavefield Reconstruction Inversion. In *Inaugural Full-Waveform Inversion Workshop*, 08-09 2015. (Natal, Brazil).
- [60] Zhilong Fang, Chia Ying Lee, Curt Da Silva, Tristan van Leeuwen, and Felix J. Herrmann. Uncertainty quantification for Wavefield Reconstruction Inversion using a PDE free semidefinite Hessian and randomize-then-optimize method. In *SEG Technical Program Expanded Abstracts*, pages 1390–1394, 10 2016. (SEG, Dallas).
- [61] Zhilong Fang, Curt Da Silva, and Felix J. Herrmann. Fast uncertainty quantification for 2D full-waveform inversion with randomized source sub-sampling. In *EAGE Annual Conference Proceedings*, 06 2014.
- [62] Zhilong Fang, Curt Da Silva, and Felix J. Herrmann. An efficient penalty method for PDE-constrained optimization problem with source estimation and stochastic optimization. In *Applied Inverse Problems Annual Conference Proceedings*, page 40, 05–06 2017. (AIP, Hangzhou).
- [63] Zhilong Fang, Curt Da Silva, Rachel Kuske, and Felix J. Herrmann. Uncertainty quantification for inverse problems with a weak wave-equation constraint. In *WAVES 2017 — 13th International Conference on Mathematical and Numerical Aspects of Wave Propagation*, pages 127–128, 05 2017. (WAVES, Minneapolis).
- [64] Zhilong Fang, Curt Da Silva, Rachel Kuske, and Felix J. Herrmann. Uncertainty quantification for inverse problems with weak PDE-constraints. Submitted to Geophysics on December 19, 2017., 2017.
- [65] Zhilong Fang, Rongrong Wang, and Felix J. Herrmann. Source estimation for wavefield-reconstruction inversion. Submitted to GEOPHYSICS on October 20, 2017., 2017.
- [66] Sergey Fomel and Gilles Hennenfent. Reproducible computational experiments using scones. In *ICASSP*. ICASSP, 2007.
- [67] Michael P. Friedlander. Active-set approaches to basis pursuit denoising. In *SIAM Optimization*. SIAM Optimization, 05 2008.
- [68] Michael P. Friedlander. Algorithms for large-scale sparse reconstruction. In *SINBAD 2008*, 2008.
- [69] Michael P. Friedlander. Algorithms for large-scale sparse reconstruction. In *IEMS*, Northwestern University, 2009. IEMS Colloquium Speaker.
- [70] Michael P. Friedlander. Computing sparse and group-sparse approximations. In *VIET*, Hanoi, Vietnam, 2009. 2009 High Performance Scientific Computing Conference.

- [71] Michael P. Friedlander, Hassan Mansour, Rayan Saab, and Ozgur Yilmaz. Recovering compressively sampled signals using partial support information. *IEEE Transactions on Information Theory*, 58(2):1122–1134, 02 2012.
- [72] Michael P. Friedlander and M. A. Saunders. Discussion: the Dantzig selector: statistical estimation when  $p$  is much larger than  $n$ . *The Annals of Statistics*, 35(6):2385–2391, 03 2007.
- [73] Michael P. Friedlander and M. A. Saunders. Active-set methods for basis pursuit. In *WCOM*. West Coast Optimization Meeting (WCOM), 07 2008.
- [74] Michael P. Friedlander and Mark Schmidt. Hybrid deterministic-stochastic methods for data fitting. *SIAM Journal on Scientific Computing*, 34(3):A1380–A1405, 01 2012.
- [75] Michael P. Friedlander and P. Tseng. Exact regularization of convex programs. *SIAM Journal on Optimization*, 18(4):1326–1350, 05 2007.
- [76] M. O. Frijlink, Reza Shahidi, Felix J. Herrmann, and R. G. van Borselen. Comparison of standard adaptive subtraction and primary-multiple separation in the curvelet domain. In *EAGE Annual Conference Proceedings*, 06 2010.
- [77] Navid Ghadermarzy. Using prior support information in compressed sensing. Master’s thesis, The University of British Columbia, Vancouver, 08 2013. (MSc).
- [78] Navid Ghadermarzy, Hassan Mansour, and Ozgur Yilmaz. Non-convex compressed sensing using partial support information. *Journal of Sampling Theory in Signal and Image Processing*, 13(3):249–270, 2014.
- [79] Navid Ghadermarzy, Ozgur Yilmaz, and Felix J. Herrmann. Seismic trace interpolation with approximate message passing. In *SEG Technical Program Expanded Abstracts*, pages 3621–3626, 10 2014. (SEG).
- [80] Eldad Haber, Matthias Chung, and Felix J. Herrmann. An effective method for parameter estimation with PDE constraints with multiple right hand sides. *SIAM Journal on Optimization*, 22(3), 07 2012.
- [81] Brock Hargreaves. Sparse signal recovery: analysis and synthesis formulations with prior support information. Master’s thesis, The University of British Columbia, Vancouver, 04 2014. (MSc).
- [82] Gilles Hennenfent. Basic processing flows with scon. In *SINBAD*. SINBAD, 2006.
- [83] Gilles Hennenfent. The Nonuniform Fast Discrete Curvelet Transform (NFDCT). In *SINBAD 2006*, 2006.

- [84] Gilles Hennenfent. A primer on sparsity transforms: curvelets and wave atoms. In *SINBAD 2006*, 2006.
- [85] Gilles Hennenfent. A primer on stable signal recovery. In *SINBAD*. SINBAD, 2006.
- [86] Gilles Hennenfent. Recovery of seismic data: practical considerations. In *SINBAD 2006*, 2006.
- [87] Gilles Hennenfent. Just denoise: nonlinear recovery from randomly sampled data. In *SINBAD 2007*, 2007.
- [88] Gilles Hennenfent. Reproducible research in computational (geo)sciences. In *Graduate seminar series*. Graduate Seminar Series, 01 2007.
- [89] Gilles Hennenfent. New insights into one-norm solvers from the Pareto curve. In *SINBAD*, 2008.
- [90] Gilles Hennenfent. *Sampling and reconstruction of seismic wavefields in the curvelet domain*. PhD thesis, The University of British Columbia, Vancouver, 05 2008. (PhD).
- [91] Gilles Hennenfent. Simply denoise: wavefield reconstruction via jittered undersampling. In *SINBAD 2008*, 2008.
- [92] Gilles Hennenfent, Lloyd Fenelon, and Felix J. Herrmann. Nonequispaced curvelet transform for seismic data reconstruction: a sparsity-promoting approach. *Geophysics*, 75(6):WB203–WB210, 12 2010.
- [93] Gilles Hennenfent and Felix J. Herrmann. Three-term amplitude-versus-offset (AVO) inversion revisited by curvelet and wavelet transforms. In *SEG Technical Program Expanded Abstracts*, pages 211–214. SEG, 2004.
- [94] Gilles Hennenfent and Felix J. Herrmann. Sparseness-constrained data continuation with frames: applications to missing traces and aliased signals in 2/3-D. In *SEG Technical Program Expanded Abstracts*, pages 2162–2165. SEG, 2005.
- [95] Gilles Hennenfent and Felix J. Herrmann. Application of stable signal recovery to seismic data interpolation. In *SEG Technical Program Expanded Abstracts*, pages 2797–2801. SEG, 2006.
- [96] Gilles Hennenfent and Felix J. Herrmann. Seismic denoising with nonuniformly sampled curvelets. *Computing in Science & Engineering*, 8(3):16–25, 05 2006.
- [97] Gilles Hennenfent and Felix J. Herrmann. Curvelet reconstruction with sparsity-promoting inversion: successes and challenges. In *EAGE Workshop on Curvelets, contourlets, seislets, ... in seismic data processing - where are we and where are we going?*, 06 2007.



- [98] Gilles Hennenfent and Felix J. Herrmann. Irregular sampling: from aliasing to noise. In *EAGE Annual Conference Proceedings*, 06 2007.
- [99] Gilles Hennenfent and Felix J. Herrmann. Random sampling: new insights into the reconstruction of coarsely sampled wavefields. In *SEG Technical Program Expanded Abstracts*, pages 2575–2579. SEG, 2007.
- [100] Gilles Hennenfent and Felix J. Herrmann. Recent insights in  $\ell_1$  solvers. In *SINBAD 2007*, 2007.
- [101] Gilles Hennenfent and Felix J. Herrmann. One-norm regularized inversion: learning from the Pareto curve. In *SEG Technical Program Expanded Abstracts*. SEG, 2008.
- [102] Gilles Hennenfent and Felix J. Herrmann. One-norm regularized inversion: learning from the Pareto curve. Technical Report TR-EOAS-2008-5, UBC Earth and Ocean Sciences Department, 2008.
- [103] Gilles Hennenfent and Felix J. Herrmann. Simply denoise: wavefield reconstruction via jittered undersampling. *Geophysics*, 73(3):V19–V28, 05 2008.
- [104] Gilles Hennenfent, Felix J. Herrmann, and R. Neelamani. Sparseness-constrained seismic deconvolution with curvelets. In *CSEG Annual Conference Proceedings*. CSEG, 05 2005.
- [105] Gilles Hennenfent, R. Neelamani, and Felix J. Herrmann. Seismic deconvolution revisited with curvelet frames. In *EAGE Annual Conference Proceedings*, 06 2005.
- [106] Gilles Hennenfent and Sean Ross-Ross. *Repro: a Python package for automating reproducible research in scientific computing*, 08 2008.
- [107] Gilles Hennenfent, Ewout van den Berg, Michael P. Friedlander, and Felix J. Herrmann. New insights into one-norm solvers from the Pareto curve. *Geophysics*, 73(4):A23–A26, 07 2008.
- [108] Felix J. Herrmann. Scaling and seismic reflectivity: implications of scaling on AVO. In *EAGE Annual Conference Proceedings*, 06 2001.
- [109] Felix J. Herrmann. Multifractional splines: application to seismic imaging. In Michael A. Unser, Akram Aldroubi, and Andrew F. Laine, editors, *Proceedings of SPIE Technical Conference on Wavelets: Applications in Signal and Image Processing X*, volume 5207, pages 240–258. SPIE, 2003.
- [110] Felix J. Herrmann. "optimal" imaging with curvelets. In *SEG Technical Program Expanded Abstracts*, volume 22, pages 997–1000, 2003.
- [111] Felix J. Herrmann. Curvelet imaging and processing: an overview. In *CSEG Annual Conference Proceedings*. CSEG, 05 2004.

- [112] Felix J. Herrmann. Seismic deconvolution by atomic decomposition: a parametric approach with sparseness constraints. *Integrated Computer-Aided Engineering*, 12(1):69–90, 01 2005.
- [113] Felix J. Herrmann. Multiple prediction from incomplete data. In *SINBAD 2006*, 2006.
- [114] Felix J. Herrmann. Opening meeting. In *SINBAD 2006*, 2006.
- [115] Felix J. Herrmann. A primer on sparsity transforms: curvelets and wave atoms. In *SINBAD 2006*, 2006.
- [116] Felix J. Herrmann. A primer on weak conditions for stable recovery. In *SINBAD 2006*, 2006.
- [117] Felix J. Herrmann. Sparsity- and continuity-promoting seismic image recovery with curvelets. In *SINBAD 2006*, 2006.
- [118] Felix J. Herrmann. Stable recovery and separation of seismic data. In *SINBAD 2006*, 2006.
- [119] Felix J. Herrmann. Compressed wavefield extrapolation. In *SINBAD 2007*, 2007.
- [120] Felix J. Herrmann. Compressive sampling meets seismic imaging. In *PIMS*, 2007.
- [121] Felix J. Herrmann. Compressive seismic imaging. In *AMS Von Neumann*, 2007.
- [122] Felix J. Herrmann. Focused recovery with the curvelet transform. In *SINBAD 2007*, 2007.
- [123] Felix J. Herrmann. From seismic data to the composition of rocks: an interdisciplinary and multiscale approach to exploration seismology. In *Berkhout’s valedictory address: the conceptual approach of understanding*, 2007.
- [124] Felix J. Herrmann. Multiple prediction from incomplete data with the focused curvelet transform. In *SEG Technical Program Expanded Abstracts*, volume 26, pages 2505–2600, 2007.
- [125] Felix J. Herrmann. Phase transitions in explorations seismology: statistical mechanics meets information theory. In *COIP*, 2007.
- [126] Felix J. Herrmann. Recent developments in curvelet-based seismic processing. In *EAGE Annual Conference Proceedings*, 06 2007.
- [127] Felix J. Herrmann. Recent developments in primary-multiple separation. In *SINBAD 2007*, 2007.

- [128] Felix J. Herrmann. Seismic image amplitude recovery. In *SINBAD 2007*, 2007.
- [129] Felix J. Herrmann. Seismic inversion through operator overloading. In *AIP*, 2007.
- [130] Felix J. Herrmann. Seismology meets compressive sampling. In *Cyber*, 2007. Presented at the joint NSF-IPAM meeting. Los Angeles. October, 2007.
- [131] Felix J. Herrmann. Stable seismic data recovery. In *AIP*, 2007.
- [132] Felix J. Herrmann. Surface related multiple prediction from incomplete data. In *EAGE Annual Conference Proceedings*, 06 2007.
- [133] Felix J. Herrmann. Adaptive curvelet-domain primary-multiple separation. In *SINBAD*. SINBAD, 2008. SINBAD 2008.
- [134] Felix J. Herrmann. Compressive sampling: a new paradigm for seismic data acquisition and processing? In *ION*, 2008.
- [135] Felix J. Herrmann. Curvelet-domain matched filtering. In *SEG Technical Program Expanded Abstracts*, volume 27, pages 3643–3649. SEG, 11 2008.
- [136] Felix J. Herrmann. (de)-Focused wavefield reconstructions. In *SINBAD 2008*, 2008.
- [137] Felix J. Herrmann. Phase-space matched filtering and migration preconditioning. In *SINBAD 2008*, 2008.
- [138] Felix J. Herrmann. Seismic noise: the good, the bad, & the ugly. In *SEG Technical Program Expanded Abstracts*, 2008.
- [139] Felix J. Herrmann. SINBAD 2008 consortium meeting. In *SINBAD 2008*, 2008.
- [140] Felix J. Herrmann. Compressed sensing and sparse recovery in exploration seismology. In *PIMS*, 2009. Lecture I presented at the PIMS Summer School on Seismic Imaging, Seattle.
- [141] Felix J. Herrmann. Compressed sensing and sparse recovery in exploration seismology. In *PIMS*, 2009. Lecture II presented at the PIMS Summer School on Seismic Imaging, Seattle.
- [142] Felix J. Herrmann. Compressed sensing and sparse recovery in exploration seismology. In *PIMS*, 2009. Lecture III presented at the PIMS Summer School on Seismic Imaging, Seattle.
- [143] Felix J. Herrmann. Compressive imaging by wavefield inversion with group sparsity. In *SEG Technical Program Expanded Abstracts*, volume 28, pages 2337–2341. SEG, 10 2009.

- [144] Felix J. Herrmann. Reflector-preserved lithological upscaling. In *SEG Technical Program Expanded Abstracts*, volume 28, pages 3466–3470. SEG, 10 2009.
- [145] Felix J. Herrmann. Sub-Nyquist sampling and sparsity: how to get more information from fewer samples. In *SEG Technical Program Expanded Abstracts*, volume 28, pages 3410–3415. SEG, 10 2009.
- [146] Felix J. Herrmann. Compressive sensing and sparse recovery in exploration seismology. In *MATHIAS*, 2010. Presented at MATHIAS 2010 organized by Total SA. Paris.
- [147] Felix J. Herrmann. Empirical recovery conditions for seismic sampling. Technical Report TR-EOAS-2010-2, Department of Earth and Ocean Sciences, UBC, 2010.
- [148] Felix J. Herrmann. NSERC 2010 DNOISE application. Technical Report TR-EOAS-2010-3, UBC, 2010.
- [149] Felix J. Herrmann. Randomized sampling and sparsity: getting more information from fewer samples. *Geophysics*, 75(6):WB173–WB187, 12 2010.
- [150] Felix J. Herrmann. Randomized sampling strategies. In *EAGE Annual Conference Proceedings*, 06 2010.
- [151] Felix J. Herrmann. Sub-Nyquist sampling and sparsity: getting more information from fewer samples. In *IRIS*, 2010. Presented at the IRIS Workshop.
- [152] Felix J. Herrmann. Gene Golub SIAM Summer School July 4 - 15, 2011. In *SLIM*, 08 2011.
- [153] Felix J. Herrmann. Lecture 2. Gene Golub SIAM Summer School July 4 - 15, 2011. In *SLIM*, 08 2011.
- [154] Felix J. Herrmann. NSERC 2011 DNOISE progress report. Technical Report TR-EOAS-2011-1, UBC, 2011.
- [155] Felix J. Herrmann. Accelerated large-scale inversion with message passing. In *SEG Technical Program Expanded Abstracts*, volume 31, pages 1–6. SEG, 11 2012.
- [156] Felix J. Herrmann. Approximate message passing meets exploration seismology. In *2012 IEEE Statistical Signal Processing Workshop (SSP) (SSP’12)*, Ann Arbor, Michigan, USA, 03 2012. IEEE.
- [157] Felix J. Herrmann. Compressive sensing and sparse recovery in exploration seismology. In *Talk at University of Wisconsin*, 2012.

- [158] Felix J. Herrmann. NSERC 2012 DNOISE progress report. Technical Report TR-EOAS-2012-4, UBC, 2012.
- [159] Felix J. Herrmann. Pass on the message: recent insights in large-scale sparse recovery. In *EAGE Annual Conference Proceedings*, 06 2012.
- [160] Felix J. Herrmann. Dimensionality reduction in FWI. In *SIAM*, 02 2013.
- [161] Felix J. Herrmann. NSERC 2013 DNOISE progress report. Technical Report TR-EOAS-2013-5, UBC, 2013.
- [162] Felix J. Herrmann. Randomized sampling in exploration seismology. In *SPIE Optics and Photonics: Wavelets and Sparsity XV*, 08 2013.
- [163] Felix J. Herrmann. Randomized sampling in exploration seismology. In *KAUST*. KAUST, 05 2013.
- [164] Felix J. Herrmann. Randomized sampling in exploration seismology. In *NIPS*, 2013.
- [165] Felix J. Herrmann. Recent developments in wave-equation based inversion technology. In *SEG Workshop on FWI; Oman*, 04 2013.
- [166] Felix J. Herrmann. Seismic advances. *International Innovation*, pages 46–49, 01 2013.
- [167] Felix J. Herrmann. Breaking structure - why randomized sampling matters. In *CSEG Technical Luncheon*, 01 2014.
- [168] Felix J. Herrmann. Imaging/Inversion with irregular/random sampled spatial arrays. In *SEG-AGU Workshop on Advances in Active + Passive "Full Wavefield" Seismic Imaging: From Reservoirs to Plate Tectonics*, 07 2014. (SEG-AGU Workshop, 22-24 July, Vancouver).
- [169] Felix J. Herrmann. Low-rank based matrix/tensor completions for the "real" (seismic) world. In *Workshop on Sparse Representations, Numerical Linear Algebra, and Optimization; Banff*, 10 2014. (Workshop at the Banff International Research Station for Mathematical Innovation and Discovery).
- [170] Felix J. Herrmann. NSERC 2014 DNOISE application. Technical Report TR-EOAS-2014-7, UBC, 2014.
- [171] Felix J. Herrmann. NSERC 2014 DNOISE progress report. Technical Report TR-EOAS-2014-8, UBC, 2014.
- [172] Felix J. Herrmann. Relax the physics and expand the search space – FWI via Wavefield Reconstruction Inversion. In *ROSE Consortium; Norway*, 05 2014. (ROSE Consortium).

- [173] Felix J. Herrmann. Automatic salt flooding with constrained wavefield reconstruction inversion. In *SEG Summer Research Workshop on FWI Applications from Imaging to Reservoir Characterization*; Houston, 07 2015. (SEG Summer Workshop, Houston).
- [174] Felix J. Herrmann. Compressive Sensing in Exploration Seismology - where we came from, where we are now, and where we need to go. In *SEG Geophysical Compressed Sensing Workshop*; Beijing, China, 12 2015. (SEG Workshop, Beijing, China).
- [175] Felix J. Herrmann. Randomized algorithms in exploration seismology. In *ASEG Annual Conference Proceedings*, 02 2015. (ASEG, Perth).
- [176] Felix J. Herrmann. Randomized algorithms in seismic imaging. In *Inaugural Full-Waveform Inversion Workshop*, 08-09 2015. (Natal, Brazil).
- [177] Felix J. Herrmann. Wavefield Reconstruction Inversion – reaping the benefits from extending the search space. In *SIAM Conference on Mathematical and Computational Issues in the Geosciences*, 06-07 2015. (SIAM Conference on Mathematical and Computational Issues in the Geosciences, Stanford University, California).
- [178] Felix J. Herrmann. Wavefield-Reconstruction Inversion — WRI. In *Inaugural Full-Waveform Inversion Workshop*, 08-09 2015. (Natal, Brazil).
- [179] Felix J. Herrmann. Overview research at the SINBAD Consortium. Technical Report TR-EOAS-2016-1, UBC, 03 2016. Presented at a seminar at Schlumberger Gould, Cambridge on March 17, 2016.
- [180] Felix J. Herrmann, Aleksandr Y. Aravkin, Xiang Li, and Tristan van Leeuwen. Full waveform inversion with compressive updates. In *SLRA. Sparse and Low Rank Approximation 2011*, 2011.
- [181] Felix J. Herrmann, Aleksandr Y. Aravkin, Tristan van Leeuwen, and Xiang Li. FWI with sparse recovery: a convex-composite approach. In *ICIAM. ICIAM 2011*, 07 2011.
- [182] Felix J. Herrmann and Y. Bernabé. Seismic singularities at upper-mantle phase transitions: a site percolation model. *Geophysical Journal International*, 159(3):949–960, 12 2004.
- [183] Felix J. Herrmann, Urs Boeniger, and D. J. Verschuur. Primary-multiple separation by curvelet frames. In *SINBAD 2006*, volume 170, pages 781–799. Geophysical Journal International, 2006.
- [184] Felix J. Herrmann, Urs Boeniger, and D. J. Verschuur. Non-linear primary-multiple separation with directional curvelet frames. *Geophysical Journal International*, 170(2):781–799, 08 2007.

- [185] Felix J. Herrmann, Cody R. Brown, Yogi A. Erlangga, and Peyman P. Moghaddam. Curvelet-based migration preconditioning and scaling. *Geophysics*, 74:A41–A46, 07-08 2009.
- [186] Felix J. Herrmann, Andrew J. Calvert, Ian Hanlon, Mostafa Javanmehri, Rajiv Kumar, Tristan van Leeuwen, Xiang Li, Brendan R. Smithyman, Eric Takam Takougang, and Haneet Wason. Frugal full-waveform inversion: from theory to a practical algorithm. *The Leading Edge*, 32(9):1082–1092, 09 2013.
- [187] Felix J. Herrmann, Yogi A. Erlangga, and Tim T.Y. Lin. Compressive sampling meets seismic imaging. In *SIAM*, 2008.
- [188] Felix J. Herrmann, Yogi A. Erlangga, and Tim T.Y. Lin. Compressive seismic imaging with simultaneous acquisition. In *IAP*, 2009. Presented at the IAP meeting, Vienna.
- [189] Felix J. Herrmann, Yogi A. Erlangga, and Tim T.Y. Lin. Compressive sensing applied to full-waveform inversion. In *EAGE Annual Conference Proceedings*, 06 2009.
- [190] Felix J. Herrmann, Yogi A. Erlangga, and Tim T.Y. Lin. Compressive simultaneous full-waveform simulation. *Geophysics*, 74(4):A35–A40, 07-08 2009.
- [191] Felix J. Herrmann, Yogi A. Erlangga, and Tim T.Y. Lin. Compressive-wavefield simulations. In *SAMPTA*. SAMPTA, 2009.
- [192] Felix J. Herrmann, Yogi A. Erlangga, Tim T.Y. Lin, and Cody R. Brown. Introduction to compressive (wavefield) computation. In *SINBAD 2008*, 2008.
- [193] Felix J. Herrmann, Ernie Esser, and Lluís Guasch. Wavefield Reconstruction Inversion with convex constraints. In *Inaugural Full-Waveform Inversion Workshop*, 08-09 2015. (Natal, Brazil).
- [194] Felix J. Herrmann, Ernie Esser, Tristan van Leeuwen, and Bas Peters. Wavefield Reconstruction Inversion (WRI) – a new take on wave-equation based inversion. In *SEG Workshop on Full Waveform Inversion - Elastic Approaches and Issues with Anisotropy, Nonshallow Inversion, Poor Starting Model; Denver*, 10 2014. (SEG Workshop, Denver).
- [195] Felix J. Herrmann, Michael P. Friedlander, and Ozgur Yilmaz. Fighting the curse of dimensionality: compressive sensing in exploration seismology. *Signal Processing Magazine, IEEE*, 29(3):88–100, 05 2012.
- [196] Felix J. Herrmann and Gilles Hennenfent. Non-linear data continuation with redundant frames. In *CSEG Annual Conference Proceedings*. CSEG, 05 2005.

- [197] Felix J. Herrmann and Gilles Hennenfent. Robust curvelet-domain data continuation with sparseness constraints. In *EAGE Annual Conference Proceedings*, 06 2005.
- [198] Felix J. Herrmann and Gilles Hennenfent. Non-parametric seismic data recovery with curvelet frames. *Geophysical Journal International*, 173:233–248, 04 2008.
- [199] Felix J. Herrmann, Gilles Hennenfent, and Peyman P. Moghaddam. Seismic imaging and processing with curvelets. In *EAGE Annual Conference Proceedings*, 06 2007.
- [200] Felix J. Herrmann, Rajiv Kumar, Felix Oghenekohwo, Shashin Sharan, and Haneet Wason. Compressive time-lapse marine acquisition. In *SEG Workshop on Low cost geophysics: How to be creative in a cost-challenged environment; Dallas*, 10 2016. (SEG Workshop, Dallas).
- [201] Felix J. Herrmann and Xiang Li. Randomized dimensionality reduction for full-waveform inversion. In *EAGE Annual Conference Proceedings*, 06 2010.
- [202] Felix J. Herrmann and Xiang Li. Efficient least-squares migration with sparsity promotion. In *EAGE Annual Conference Proceedings*, 05 2011.
- [203] Felix J. Herrmann and Xiang Li. Efficient least-squares imaging with sparsity promotion and compressive sensing. *Geophysical Prospecting*, 60(4):696–712, 07 2012.
- [204] Felix J. Herrmann, Xiang Li, Aleksandr Y. Aravkin, and Tristan van Leeuwen. A modified, sparsity promoting, Gauss-Newton algorithm for seismic waveform inversion. In *Proc. SPIE*, number 81380V, 08 2011.
- [205] Felix J. Herrmann and Peyman P. Moghaddam. Curvelet-based non-linear adaptive subtraction with sparseness constraints. In *SEG Technical Program Expanded Abstracts*, volume 23, pages 1977–1980. SEG, 2004.
- [206] Felix J. Herrmann and Peyman P. Moghaddam. Curvelet-domain least-squares migration with sparseness constraints. In *EAGE Annual Conference Proceedings*, 06 2004.
- [207] Felix J. Herrmann and Peyman P. Moghaddam. Curvelet-domain preconditioned ‘wave-equation’ depth-migration with sparseness and illumination constraints. In *EAGE Annual Conference Proceedings*, 06 2004.
- [208] Felix J. Herrmann and Peyman P. Moghaddam. Curvelet imaging and processing: sparseness-constrained least-squares migration. In *CSEG Annual Conference Proceedings*. CSEG, 05 2004.
- [209] Felix J. Herrmann and Peyman P. Moghaddam. Non-linear regularization in seismic imaging. In *CSEG Annual Conference Proceedings*. CSEG, 05 2005.



- [210] Felix J. Herrmann and Peyman P. Moghaddam. Just diagonalize: a curvelet-based approach to seismic amplitude recovery. In *EAGE Workshop on Curvelets, contourlets, seislets, ... in seismic data processing - where are we and where are we going?*, 06 2007.
- [211] Felix J. Herrmann, Peyman P. Moghaddam, and R. Kirilin. Optimization strategies for sparseness- and continuity-enhanced imaging: theory. In *EAGE Annual Conference Proceedings*, 06 2005.
- [212] Felix J. Herrmann, Peyman P. Moghaddam, and Christiaan C. Stolk. Sparsity- and continuity-promoting seismic image recovery with curvelet frames. *Applied and Computational Harmonic Analysis*, 24(2):150–173, 03 2008.
- [213] Felix J. Herrmann, Peyman P. Moghaddam, and Deli Wang. Curvelet-domain matched filtering. In *SEG Technical Program Expanded Abstracts*, volume 27. SEG, 08 2008.
- [214] Felix J. Herrmann and Bas Peters. Pros and cons of full- and reduced-space methods for Wavefield Reconstruction Inversion. In *SIAM Conference on Mathematical and Computational Issues in the Geosciences*, 06-07 2015. (SIAM Conference on Mathematical and Computational Issues in the Geosciences, Stanford University, California).
- [215] Felix J. Herrmann and Bas Peters. Constraints versus penalties for edge-preserving full-waveform inversion. In *SEG Workshop on Where are we heading with FWI; Dallas*, 10 2016. (SEG Workshop, Dallas).
- [216] Felix J. Herrmann and Curt Da Silva. Domain-specific abstractions for full-waveform inversion. In *SIAM Conference on Computational Science and Engineering*, 02-03 2017. (SIAM Conference on Computational Science and Engineering, Atlanta).
- [217] Felix J. Herrmann, Gang Tang, Reza Shahidi, Gilles Hennenfent, and Tim T.Y. Lin. Beating nyquist by randomized sampling. In *EAGE Annual Conference Proceedings*, 2009. Presented at the EAGE (workshop), Amsterdam.
- [218] Felix J. Herrmann and Ning Tu. Fast RTM with multiples and source estimation. In *EAGE/SEG Forum - Turning noise into geological information: The next big step?*, 11 2013.
- [219] Felix J. Herrmann, Ning Tu, and Ernie Esser. Fast "online" migration with Compressive Sensing. In *EAGE Annual Conference Proceedings*, 06 2015. (EAGE, Madrid).
- [220] Felix J. Herrmann and Tristan van Leeuwen. SINBAD's research program. 11 2011.

- [221] Felix J. Herrmann and Tristan van Leeuwen. A penalty method for PDE-constrained optimization. Patent WO 2014/172787, UBC, 10 2014. (International publication date 30 October 2014. International publication number WO 2014/172787.).
- [222] Felix J. Herrmann and D. J. Verschuur. Curvelet-domain multiple elimination with sparseness constraints. In *SEG Technical Program Expanded Abstracts*, volume 23, pages 1333–1336. SEG, 2004.
- [223] Felix J. Herrmann and D. J. Verschuur. Curvelet imaging and processing: adaptive multiple elimination. In *CSEG Annual Conference Proceedings*. CSEG, 05 2004.
- [224] Felix J. Herrmann and D. J. Verschuur. Separation of primaries and multiples by non-linear estimation in the curvelet domain. In *EAGE Annual Conference Proceedings*, 06 2004.
- [225] Felix J. Herrmann and D. J. Verschuur. Robust curvelet-domain primary-multiple separation with sparseness constraints. In *EAGE Annual Conference Proceedings*, 06 2005.
- [226] Felix J. Herrmann and Deli Wang. Seismic wavefield inversion with curvelet-domain sparsity promotion. In *SEG Technical Program Expanded Abstracts*, volume 27, pages 2497–2501. SEG, 11 2008.
- [227] Felix J. Herrmann, Deli Wang, Gilles Hennenfent, and Peyman P. Moghaddam. Seismic data processing with curvelets: a multiscale and nonlinear approach. In *SEG Technical Program Expanded Abstracts*, volume 26, pages 2220–2224. SEG, 2007.
- [228] Felix J. Herrmann, Deli Wang, Gilles Hennenfent, and Peyman P. Moghaddam. Curvelet-based seismic data processing: a multiscale and nonlinear approach. *Geophysics*, 73(1):A1–A5, 03 2008.
- [229] Felix J. Herrmann, Deli Wang, and D. J. Verschuur. Adaptive curvelet-domain primary-multiple separation. *Geophysics*, 73(3):A17–A21, 08 2008.
- [230] Felix J. Herrmann and Haneet Wason. Compressive sensing in marine acquisition and beyond. In *EAGE Annual Conference Proceedings*, 06 2012.
- [231] Felix J. Herrmann, Haneet Wason, and Tim T.Y. Lin. Compressive sensing in seismic exploration: an outlook on a new paradigm. *CSEG Recorder*, 36(6):34–39, 06 2011. Part 1 was published in April and Part 2 was published in June.
- [232] Felix J. Herrmann, Haneet Wason, and Tim T.Y. Lin. Compressive sensing in seismic exploration: an outlook on a new paradigm. *CSEG Recorder*, 36(4):19–33, 04 2011. Part 1 was published in April and Part 2 was published in June.

- [233] Felix J. Herrmann and D. Wilkinson. Seismic noise: the good, the bad and the ugly. In *SEG Summer Research Workshop: Seismic Noise: Origins, Preventions, Mitigation, Utilization*, 2007. Presented at SEG Summer Research Workshop: Seismic Noise: Origins, Prevention, Mitigation, Utilization.
- [234] James Johnson. Seismic wavefield reconstruction using reciprocity. Master’s thesis, The University of British Columbia, Vancouver, 03 2013. (MSc).
- [235] James Johnson and Gilles Hennenfent. Seismic data interpolation with symmetry. In *SINBAD 2008*, 2008.
- [236] James Johnson, Tim T.Y. Lin, and Felix J. Herrmann. Estimation of primaries via sparse inversion with reciprocity. In *EAGE Annual Conference Proceedings*, 2010.
- [237] Bander Jumah. Dimensionality-reduced estimation of primaries by sparse inversion. Master’s thesis, The University of British Columbia, Vancouver, 02 2012. (MSc).
- [238] Bander Jumah and Felix J. Herrmann. Dimensionality-reduced estimation of primaries by sparse inversion. In *SEG Technical Program Expanded Abstracts*, volume 30, pages 3520–3525. SEG, 09 2011.
- [239] Bander Jumah and Felix J. Herrmann. Dimensionality-reduced estimation of primaries by sparse inversion. *Geophysical Prospecting*, 62(5):972–993, 09 2014. (Geophysical Prospecting).
- [240] Ajinkya Kadu and Rajiv Kumar. Decentralized full-waveform inversion. In *EAGE Annual Conference Proceedings*, 06 2018. (EAGE, Copenhagen).
- [241] Ajinkya Kadu, Rajiv Kumar, and Tristan van Leeuwen. Full-waveform inversion with mumford-shah regularization. 2018. Accepted for SEG 2018.
- [242] Navjot Kukreja, Michael Lange, Mathias Louboutin, Fabio Luporini, and Gerard Gorman. Devito: symbolic math for automated fast finite difference computations. In *SIAM Conference on Computational Science and Engineering*, 02-03 2017. (SIAM Conference on Computational Science and Engineering, Atlanta).
- [243] Navjot Kukreja, Mathias Louboutin, Michael Lange, Fabio Luporini, and Gerard Gorman. Leveraging symbolic math for rapid development of applications for seismic modeling. In *OGHPC*, 03 2017. (Oil and Gas HPC Conference, Rice University).
- [244] Navjot Kukreja, Mathias Louboutin, Felipe Vieira Zacarias, Fabio Luporini, Michael Lange, and Gerard Gorman. Devito: automated fast finite difference computation. In *WOLFHPC 2016 Workshop (Super Computing)*, 11 2016. (WOLFHPC Workshop (SC16), Utah).

- [245] Rajiv Kumar. *Enabling large-scale seismic data acquisition, processing and waveform-inversion via rank-minimization*. PhD thesis, The University of British Columbia, Vancouver, 08 2017. (PhD).
- [246] Rajiv Kumar, Aleksandr Y. Aravkin, Ernie Esser, Hassan Mansour, and Felix J. Herrmann. SVD-free low-rank matrix factorization : wavefield reconstruction via jittered subsampling and reciprocity. In *EAGE Annual Conference Proceedings*, 06 2014.
- [247] Rajiv Kumar, Aleksandr Y. Aravkin, and Felix J. Herrmann. Fast methods for rank minimization with applications to seismic-data interpolation. Technical Report TR-EOAS-2012-3, Department of Earth and Ocean Sciences, University of British Columbia, Vancouver, 04 2012.
- [248] Rajiv Kumar, Aleksandr Y. Aravkin, Hassan Mansour, Ben Recht, and Felix J. Herrmann. Seismic data interpolation and denoising using SVD-free low-rank matrix factorization. In *EAGE Annual Conference Proceedings*, 06 2013.
- [249] Rajiv Kumar, Marie Graff-Kray, Tristan van Leeuwen, and Felix J. Herrmann. Low-rank representation of extended image volumes—applications to imaging and velocity continuation. 2018. Accepted for SEG 2018.
- [250] Rajiv Kumar, Marie Graff-Kray, Ivan Vasconcelos, and Felix J. Herrmann. Target-oriented imaging using extended image volumes—a low-rank factorization approach. Submitted to Geophysical Prospecting on May 22, 2018., 2018.
- [251] Rajiv Kumar, Oscar Lopez, Damek Davis, Aleksandr Y. Aravkin, and Felix J. Herrmann. Beating level-set methods for 5D seismic data interpolation: a primal-dual alternating approach. *IEEE Transactions on Computational Imaging*, 04 2017. (published online in IEEE Transactions on Computational Imaging).
- [252] Rajiv Kumar, Oscar Lopez, Ernie Esser, and Felix J. Herrmann. Matrix completion on unstructured grids : 2-d seismic data regularization and interpolation. Technical Report TR-EOAS-2014-3, UBC, 04 2014.
- [253] Rajiv Kumar, Oscar Lopez, Ernie Esser, and Felix J. Herrmann. Matrix completion on unstructured grids : 2-D seismic data regularization and interpolation. In *EAGE Annual Conference Proceedings*, 06 2015. (EAGE, Madrid).
- [254] Rajiv Kumar, Hassan Mansour, Aleksandr Y. Aravkin, and Felix J. Herrmann. Reconstruction of seismic wavefields via low-rank matrix factorization in the hierarchical-separable matrix representation. In *SEG Technical Program Expanded Abstracts*, volume 32, pages 3628–3633, 09 2013.

- [255] Rajiv Kumar, Nick Moldoveanu, and Felix J. Herrmann. Denoising high-amplitude cross-flow noise using curvelet-based stable principle component pursuit. In *EAGE Annual Conference Proceedings*, 06 2017. (EAGE, Paris).
- [256] Rajiv Kumar, Shashin Sharan, Nick Moldoveanu, and Felix J. Herrmann. Compressed sensing based land simultaneous acquisition using encoded sweeps. In *EAGE Annual Conference Proceedings*, 06 2018. (EAGE, Copenhagen).
- [257] Rajiv Kumar, Shashin Sharan, Haneet Wason, and Felix J. Herrmann. Time-jittered marine acquisition—a rank-minimization approach for 5D source separation. In *SEG Technical Program Expanded Abstracts*, pages 119–123, 10 2016. (SEG, Dallas).
- [258] Rajiv Kumar, Curt Da Silva, Okan Akalin, Aleksandr Y. Aravkin, Hassan Mansour, Ben Recht, and Felix J. Herrmann. Efficient matrix completion for seismic data reconstruction. *Geophysics*, 80(5):V97–V114, 09 2015. (Geophysics).
- [259] Rajiv Kumar, Curt Da Silva, Oscar Lopez, Aleksandr Y. Aravkin, Hassan Mansour, Haneet Wason, Ernie Esser, and Felix J. Herrmann. Rank minimization based seismic data processing and inversion. In *Inaugural Full-Waveform Inversion Workshop*, 08-09 2015. (Natal, Brazil).
- [260] Rajiv Kumar, Ning Tu, Tristan van Leeuwen, and Felix J. Herrmann. Least-squares extended imaging with surface-related multiples. In *CSEG Annual Conference Proceedings*, 05 2015. (CSEG, Calgary).
- [261] Rajiv Kumar, Ning Tu, Tristan van Leeuwen, and Felix J. Herrmann. Least-squares extended imaging with surface-related multiples. Technical Report TR-EOAS-2015-1, UBC, 01 2015.
- [262] Rajiv Kumar, Tristan van Leeuwen, and Felix J. Herrmann. AVA analysis and geological dip estimation via two-way wave-equation based extended images. In *SEG Technical Program Expanded Abstracts*, volume 32, pages 423–427, 09 2013.
- [263] Rajiv Kumar, Tristan van Leeuwen, and Felix J. Herrmann. Efficient WEMVA using extended images. In *SEG Workshop on Advances in Model Building, Imaging, and FWI; Houston*, 09 2013.
- [264] Rajiv Kumar, Tristan van Leeuwen, and Felix J. Herrmann. Extended images in action: efficient WEMVA via randomized probing. In *EAGE Annual Conference Proceedings*, 06 2014.
- [265] Rajiv Kumar, Haneet Wason, and Felix J. Herrmann. Source separation for simultaneous towed-streamer marine acquisition — a compressed sensing approach. *Geophysics*, 80(6):WD73–WD88, 11 2015. (Geophysics).

- [266] Rajiv Kumar, Haneet Wason, and Felix J. Herrmann. Time-jittered marine acquisition: low-rank v/s sparsity. Technical Report TR-EOAS-2015-2, UBC, 01 2015.
- [267] Rajiv Kumar, Haneet Wason, Shashin Sharan, and Felix J. Herrmann. Highly repeatable 3D compressive full-azimuth towed-streamer time-lapse acquisition — a numerical feasibility study at scale. *The Leading Edge*, 36(8):677–687, 08 2017. (The Leading Edge).
- [268] Vishal Kumar. Curvelet denoising. In *SINBAD 2008*, 2008.
- [269] Vishal Kumar. Curvelet-regularized deconvolution. In *SINBAD 2008*, 2008.
- [270] Vishal Kumar. Incoherent noise suppression and deconvolution using curvelet-domain sparsity. Master’s thesis, The University of British Columbia, Vancouver, 06 2009. (MSc).
- [271] Vishal Kumar and Felix J. Herrmann. Curvelet-regularized seismic deconvolution. In *CSEG Annual Conference Proceedings*. CSEG, 05 2008.
- [272] Vishal Kumar and Felix J. Herrmann. Deconvolution with curvelet-domain sparsity. In *SEG Technical Program Expanded Abstracts*, volume 27, pages 1996–2000. SEG, 11 2008.
- [273] Vishal Kumar and Felix J. Herrmann. Incoherent noise suppression with curvelet-domain sparsity. In *SEG Technical Program Expanded Abstracts*, volume 28, pages 3356–3360. SEG, 10 2009.
- [274] Vishal Kumar, Jounada Oueity, Ron Clowes, and Felix J. Herrmann. Enhancing crustal reflection data through curvelet denoising. *Technophysics*, 508(1-4):106–116, 07 2011.
- [275] Rafael Lago and Felix J. Herrmann. Towards a robust geometric multi-grid scheme for Helmholtz equation. Technical Report TR-EOAS-2015-3, UBC, 01 2015.
- [276] Rafael Lago, Art Petrenko, Zhilong Fang, and Felix J. Herrmann. CRMN method for solving time-harmonic wave equation. In *Copper Mountain Conference*, 04 2014. (Copper Mountain).
- [277] Rafael Lago, Art Petrenko, Zhilong Fang, and Felix J. Herrmann. Fast solution of time-harmonic wave-equation for full-waveform inversion. In *EAGE Annual Conference Proceedings*, 06 2014.
- [278] Michael Lange, Navjot Kukreja, Mathias Louboutin, Fabio Luporini, Felipe Vieira Zacarias, Vincenzo Pandolfo, Paulius Velesko, Paulius Kazakas, and Gerard Gorman. Devito: Towards a generic finite difference DSL using symbolic python. In *6th Workshop on Python for High-Performance and Scientific Computing*, pages 67–75, 11 2016. (PyHPC, Utah).

- [279] Michael Lange, Navjot Kukreja, Fabio Luporini, Mathias Louboutin, Charles Yount, Jan Hückelheim, and Gerard Gorman. Optimised finite difference computation from symbolic equations. In *Python in Science Conference Proceedings*, pages 89–96, 07 2017. (SciPy, Texas).
- [280] Evgeniy Lebed. Applications of curvelets/surfacelets to seismic data processing. In *SINBAD*, 2008.
- [281] Evgeniy Lebed. Curvelet / Surfacelet comparison. In *SINBAD*, 2008.
- [282] Evgeniy Lebed. Sparse signal recovery in a transform domain. Master’s thesis, The University of British Columbia, Vancouver, 08 2008. (MSc).
- [283] Evgeniy Lebed and Felix J. Herrmann. A hitchhiker’s guide to the galaxy of transform-domain sparsification. In *SEG Technical Program Expanded Abstracts*. SEG, 2008.
- [284] Evgeniy Lebed and Felix J. Herrmann. A hitchhiker’s guide to the galaxy of transform-domain sparsification. Technical Report TR-EOAS-2008-4, UBC Earth and Ocean Sciences Department, 2008.
- [285] Xiang Li. *Sparsity promoting seismic imaging and full-waveform inversion*. PhD thesis, The University of British Columbia, Vancouver, 07 2015. (PhD).
- [286] Xiang Li, Aleksandr Y. Aravkin, Tristan van Leeuwen, and Felix J. Herrmann. Full-waveform inversion with randomized L1 recovery for the model updates. In *EAGE Annual Conference Proceedings*, 05 2011.
- [287] Xiang Li, Aleksandr Y. Aravkin, Tristan van Leeuwen, and Felix J. Herrmann. Fast randomized full-waveform inversion with compressive sensing. *Geophysics*, 77(3):A13–A17, 05 2012.
- [288] Xiang Li, Ernie Esser, and Felix J. Herrmann. Modified Gauss-Newton full-waveform inversion explained—why sparsity-promoting updates do matter. *Geophysics*, 81(3):R125–R138, 05 2016. (Geophysics).
- [289] Xiang Li and Felix J. Herrmann. Full-waveform inversion from compressively recovered model updates. In *SEG Technical Program Expanded Abstracts*, volume 29, pages 1029–1033. SEG, 10 2010.
- [290] Xiang Li and Felix J. Herrmann. Efficient full-waveform inversion with marine acquisition geometry. In *CSEG Annual Conference Proceedings*, 02 2012.
- [291] Xiang Li and Felix J. Herrmann. Sparsity-promoting migration accelerated by message passing. In *SEG Technical Program Expanded Abstracts*, volume 31, pages 1–6. SEG, 11 2012.

- [292] Xiang Li and Felix J. Herrmann. Wave-equation based multi-parameter linearized inversion with joint-sparsity promotion. Technical Report TR-EOAS-2013-1, UBC, 01 2013.
- [293] Xiang Li, Felix J. Herrmann, Tristan van Leeuwen, and Aleksandr Y. Aravkin. Modified Gauss-Newton with sparse updates. In *SBGF*. SBGF, 2011.
- [294] Xiang Li, Anaïs Tamalet, Tristan van Leeuwen, and Felix J. Herrmann. Optimization driven model-space versus data-space approaches to invert elastic data with the acoustic wave equation. In *SEG Technical Program Expanded Abstracts*, volume 32, pages 986–990, 09 2013.
- [295] Xiaowei Li. A weighted  $\ell_1$ -minimization for distributed compressive sensing. Master’s thesis, The University of British Columbia, Vancouver, 09 2015. (MSc).
- [296] Tim T.Y. Lin. Compressed imaging. In *SINBAD 2006*, 2006.
- [297] Tim T.Y. Lin. Compressed computation of large-scale wavefield extrapolation in inhomogeneous medium. masters, University of British Columbia, 04 2008.
- [298] Tim T.Y. Lin. *Primary estimation with sparsity-promoting bi-convex optimization*. PhD thesis, The University of British Columbia, Vancouver, 10 2015. (PhD).
- [299] Tim T.Y. Lin, Yogi A. Erlangga, and Felix J. Herrmann. Compressive simultaneous full-waveform simulation. In *SEG Technical Program Expanded Abstracts*, volume 28, pages 2577–2581. SEG, 10 2009.
- [300] Tim T.Y. Lin and Felix J. Herrmann. Compressed wavefield extrapolation. *Geophysics*, 72(5):SM77–SM93, 08 2007.
- [301] Tim T.Y. Lin and Felix J. Herrmann. Compressed wavefield extrapolation with curvelets. In *SEG Technical Program Expanded Abstracts*, volume 26, pages 1997–2001, 2007.
- [302] Tim T.Y. Lin and Felix J. Herrmann. Compressed wavefield extrapolation. In *SINBAD*, 2008.
- [303] Tim T.Y. Lin and Felix J. Herrmann. Designing simultaneous acquisitions with compressive sensing. In *EAGE Annual Conference Proceedings*, 06 2009.
- [304] Tim T.Y. Lin and Felix J. Herrmann. Unified compressive sensing framework for simultaneous acquisition with primary estimation. In *SEG Technical Program Expanded Abstracts*, volume 28, pages 3113–3117, 10 2009.
- [305] Tim T.Y. Lin and Felix J. Herrmann. Stabilized estimation of primaries via sparse inversion. In *EAGE Annual Conference Proceedings*, 06 2010.



- [306] Tim T.Y. Lin and Felix J. Herrmann. Estimating primaries by sparse inversion in a curvelet-like representation domain. In *EAGE Annual Conference Proceedings*, 05 2011.
- [307] Tim T.Y. Lin and Felix J. Herrmann. Robust source signature deconvolution and the estimation of primaries by sparse inversion. In *SEG Technical Program Expanded Abstracts*, volume 30, pages 4354–4359. Dept. of Earth and Ocean Sciences, University of British Columbia, 09 2011.
- [308] Tim T.Y. Lin and Felix J. Herrmann. Cospase seismic data interpolation. In *EAGE Annual Conference Proceedings*, 06 2013.
- [309] Tim T.Y. Lin and Felix J. Herrmann. Robust estimation of primaries by sparse inversion via one-norm minimization. *Geophysics*, 78(3):R133–R150, 05 2013.
- [310] Tim T.Y. Lin and Felix J. Herrmann. Mitigating data gaps in the estimation of primaries by sparse inversion without data reconstruction. In *SEG Technical Program Expanded Abstracts*, pages 4157–4161, 10 2014. (SEG).
- [311] Tim T.Y. Lin and Felix J. Herrmann. Multilevel acceleration strategy for the robust estimation of primaries by sparse inversion. In *EAGE Annual Conference Proceedings*, 06 2014.
- [312] Tim T.Y. Lin and Felix J. Herrmann. The student-driven HPC environment at SLIM. In *Inaugural Full-Waveform Inversion Workshop*, 08-09 2015. (Natal, Brazil).
- [313] Tim T.Y. Lin and Felix J. Herrmann. Estimation of primaries by sparse inversion with scattering-based multiple predictions for data with large gaps. *Geophysics*, 81(3):V183–V197, 05 2016. (Geophysics).
- [314] Tim T.Y. Lin, Felix J. Herrmann, and Yogi A. Erlangga. Randomized wavefield inversion. In *DELPHI*, 2009. Presented at the DELPHI meeting. The Hague.
- [315] Tim T.Y. Lin, Evgeniy Lebed, Yogi A. Erlangga, and Felix J. Herrmann. Interpolating solutions of the Helmholtz equation with compressed sensing. In *SEG Technical Program Expanded Abstracts*, volume 27, pages 2122–2126. SEG, 01 2008.
- [316] Tim T.Y. Lin, Curt Da Silva, and Felix J. Herrmann. Software and workflows at SLIM/SINBAD. In *Inaugural Full-Waveform Inversion Workshop*, 08-09 2015. (Natal, Brazil).
- [317] Tim T.Y. Lin, Ning Tu, and Felix J. Herrmann. Sparsity-promoting migration from surface-related multiples. In *SEG Technical Program Expanded Abstracts*, volume 29, pages 3333–3337. SEG, 10 2010.

- [318] Tim T.Y. Lin, Haneet Wason, and Felix J. Herrmann. Dense shot-sampling via time-jittered marine sources. In *SEG Workshop on Simultaneous Sources*; Houston, 09 2013.
- [319] Michelle Liu, Rajiv Kumar, Eldad Haber, and Aleksandr Y. Aravkin. Simultaneous-shot inversion for pde-constrained optimization problems with missing data. Submitted to Inverse Problem on April 29, 2018., 2018.
- [320] Oscar Lopez, Rajiv Kumar, and Felix J. Herrmann. Rank minimization via alternating optimization: seismic data interpolation. In *EAGE Annual Conference Proceedings*, 06 2015. (EAGE, Madrid).
- [321] Oscar Lopez, Rajiv Kumar, Ozgur Yilmaz, and Felix J. Herrmann. Off-the-grid low-rank matrix recovery and seismic data reconstruction. *IEEE Journal of Selected Topics in Signal Processing*, 10(4):658–671, 06 2016. (IEEE Journal of Selected Topics in Signal Processing).
- [322] Oscar Lopez, Rajiv Kumar, Ozgur Yilmaz, and Felix J. Herrmann. Off-the-grid low-rank matrix recovery: seismic data reconstruction. In *Canadian Mathematical Society Summer Meeting*, 06 2016. (CMS, Edmonton, Alberta).
- [323] Oscar Lopez, Haneet Wason, Curt Da Silva, Rajiv Kumar, and Felix J. Herrmann. SVD-free matrix completion in randomized marine acquisition. In *SEG Workshop on Rank-Reduction and Other Sparse Transform Methods with Application to Data Reconstruction, De-Noising, De-Blending and Imaging*; New Orleans, 10 2015. (SEG, New Orleans).
- [324] Mathias Louboutin, Gerard Gorman, and Felix J. Herrmann. Optimizing the computational performance and maintainability of time-domain modelling—leveraging multiple right-hand-sides. Technical Report TR-EOAS-2016-2, UBC, 06 2016.
- [325] Mathias Louboutin, Gerard Gorman, and Felix J. Herrmann. Optimizing the computational performance of time-domain modelling—leveraging multiple right-hand-sides. Technical Report TR-EOAS-2017-2, UBC, 2017.
- [326] Mathias Louboutin, Lluís Guasch, and Felix J. Herrmann. Data normalization strategies for full-waveform inversion. In *EAGE Annual Conference Proceedings*, 06 2017. (EAGE, Paris).
- [327] Mathias Louboutin and Felix J. Herrmann. Time compressively sampled full-waveform inversion with stochastic optimization. In *SEG Technical Program Expanded Abstracts*, pages 5153–5157, 10 2015. (SEG, New Orleans).

- [328] Mathias Louboutin and Felix J. Herrmann. Extending the search space of time-domain adjoint-state FWI with randomized implicit time shifts. In *EAGE Annual Conference Proceedings*, 06 2017. (EAGE, Paris).
- [329] Mathias Louboutin, Michael Lange, Felix J. Herrmann, Navjot Kukreja, and Gerard Gorman. Performance prediction of finite-difference solvers for different computer architectures. *Computers & Geosciences*, 105:148–157, 08 2017. (Computers & Geosciences).
- [330] Mathias Louboutin, Michael Lange, Navjot Kukreja, Fabio Luporini, Felix J. Herrmann, and Gerard Gorman. Raising the abstraction to separate concerns: enabling different physics for geophysical exploration. In *SIAM Conference on Computational Science and Engineering*, 02-03 2017. (SIAM Conference on Computational Science and Engineering, Atlanta).
- [331] Mathias Louboutin, Bas Peters, Brendan R. Smithyman, and Felix J. Herrmann. Regularizing waveform inversion by projections onto convex sets. In *Inaugural Full-Waveform Inversion Workshop*, 08-09 2015. (Natal, Brazil).
- [332] Mathias Louboutin, Philipp A. Witte, and Felix J. Herrmann. Effects of wrong adjoints for rtm in tti media. 2018. Accepted for SEG 2018.
- [333] Mathias Louboutin, Philipp A. Witte, Michael Lange, Navjot Kukreja, Fabio Luporini, Gerard Gorman, and Felix J. Herrmann. Full-waveform inversion - part 1: forward modeling. *The Leading Edge*, 36(12):1033–1036, 12 2017. (The Leading Edge).
- [334] Mathias Louboutin, Philipp A. Witte, Michael Lange, Navjot Kukreja, Fabio Luporini, Gerard Gorman, and Felix J. Herrmann. Full-waveform inversion - part 2: adjoint modeling. *The Leading Edge*, 37(1):69–72, 1 2018. (The Leading Edge).
- [335] FABIO LUPORINI, MICHAEL LANGE, MATHIAS LOUBOUTIN, NAVJOT KUKREJA, JAN HUCKELHEIM, CHARLES YOUNT, PHILIPP A. WITTE, PAUL H. J. KELLY, GERARD J. GORMAN, and FELIX J. HERRMANN. Architecture and performance of devito, a system for automated stencil computation. Submitted to SIAM Journal on Scientific Computing on July 9, 2018., 2018.
- [336] Hassan Mansour. Beyond  $\ell_1$  norm minimization for sparse signal recovery. In *2012 IEEE Statistical Signal Processing Workshop (SSP) (SSP'12)*, Ann Arbor, Michigan, USA, 03 2012. IEEE.
- [337] Hassan Mansour, Felix J. Herrmann, and Ozgur Yilmaz. Improved wavefield reconstruction from randomized sampling via weighted one-norm minimization. *Geophysics*, 78(5):V193–V206, 08 2013.

- [338] Hassan Mansour, Haneet Wason, Tim T.Y. Lin, and Felix J. Herrmann. A compressive sensing perspective on simultaneous marine acquisition. In *SBGF*. SBGF, 2011.
- [339] Hassan Mansour, Haneet Wason, Tim T.Y. Lin, and Felix J. Herrmann. Randomized marine acquisition with compressive sampling matrices. *Geophysical Prospecting*, 60(4):648–662, 07 2012.
- [340] Hassan Mansour and Ozgur Yilmaz. Weighted  $\ell_1$  minimization with multiple weighting sets. In *Proc. SPIE*, volume 8138, pages 813809–813809–13, 09 2011.
- [341] Hassan Mansour and Ozgur Yilmaz. Adaptive compressed sensing for video acquisition. In *ICASSP*, 2012.
- [342] Hassan Mansour and Ozgur Yilmaz. Support driven reweighted  $\ell_1$  minimization. In *ICASSP*, 2012.
- [343] Mohammad Maysami. Recent results on seismic deconvolution. In *SINBAD 2006*, 2006.
- [344] Mohammad Maysami. Lithology constraints from seismic waveforms: application to opal-A to opal-CT transition. Master’s thesis, The University of British Columbia, Vancouver, 02 2008. (MSc).
- [345] Mohammad Maysami and Felix J. Herrmann. Seismic reflector characterization by a multiscale detection-estimation method. In *EAGE Annual Conference Proceedings*, 06 2007.
- [346] Mohammad Maysami and Felix J. Herrmann. Lithological constraints from seismic waveforms: application to opal-A to opal-CT transition. In *SEG Technical Program Expanded Abstracts*, volume 27, pages 2011–2015. SEG, 11 2008.
- [347] Lina Miao. Efficient seismic imaging with spectral projector and joint sparsity. Master’s thesis, The University of British Columbia, Vancouver, 03 2014. (MSc).
- [348] Lina Miao and Felix J. Herrmann. Acceleration on sparse promoting seismic applications. In *CSEG Annual Conference Proceedings*, 05 2013.
- [349] Lina Miao, Polina Zheglova, and Felix J. Herrmann. Randomized HSS acceleration for full-wave-equation depth stepping migration. In *SEG Technical Program Expanded Abstracts*, pages 3752–3756, 10 2014. (SEG).
- [350] Henryk Modzelewski. Design and specifications for SLIM’s software framework. In *SINBAD 2006*, 2006.
- [351] Henryk Modzelewski. Design and specifications for SLIM’s software framework. In *SINBAD 2008*, 2008.

- [352] Peyman P. Moghaddam. Imaging operator approximation using curvelets. In *SINBAD 2006*, 2006.
- [353] Peyman P. Moghaddam. Sparsity- and continuity-promoting norms for seismic images. In *SINBAD 2006*, 2006.
- [354] Peyman P. Moghaddam. Reverse-time migration amplitude recovery with curvelets. In *SINBAD 2008*, 2008.
- [355] Peyman P. Moghaddam. *Curvelet-based migration amplitude recovery*. PhD thesis, The University of British Columbia, Vancouver, 05 2010. (PhD).
- [356] Peyman P. Moghaddam, Cody R. Brown, and Felix J. Herrmann. Curvelet-based migration preconditioning. In *SEG Technical Program Expanded Abstracts*, volume 27, pages 2211–2215. SEG, 11 2008.
- [357] Peyman P. Moghaddam and Felix J. Herrmann. Migration preconditioning with curvelets. In *SEG Technical Program Expanded Abstracts*, volume 23, pages 2204–2207. SEG, 2004.
- [358] Peyman P. Moghaddam and Felix J. Herrmann. Randomized full-waveform inversion: a dimensionality-reduction approach. In *SEG Technical Program Expanded Abstracts*, volume 29, pages 977–982. SEG, 10 2010.
- [359] Peyman P. Moghaddam, Felix J. Herrmann, and Christiaan C. Stolk. Migration amplitude recovery using curvelets. In *CSEG Annual Conference Proceedings*. CSEG, 05 2007.
- [360] Peyman P. Moghaddam, Felix J. Herrmann, and Christiaan C. Stolk. Robust seismic-images amplitude recovery using curvelets. In *SEG Technical Program Expanded Abstracts*, volume 26, pages 2225–2229. SEG, 2007.
- [361] Peyman P. Moghaddam, Felix J. Herrmann, and Christiaan C. Stolk. Seismic amplitude recovery with curvelets. In *EAGE Annual Conference Proceedings*, 06 2007.
- [362] Peyman P. Moghaddam, Felix J. Herrmann, and Christiaan C. Stolk. Sparsity and continuity enhancing seismic imaging. In *CSEG Annual Conference Proceedings*. CSEG, 05 2007.
- [363] Peyman P. Moghaddam, Henk Keers, Felix J. Herrmann, and Wim A. Mulder. A new optimization approach for source-encoding full-waveform inversion. *Geophysics*, 78(3):R125–R132, 05 2013.
- [364] Nick Moldoveanu, Philip Bilsby, John Quigley, Rajiv Kumar, and Felix J. Herrmann. Compressive sensing based design for land and obs surveys: The noise issue. 2018. Accepted for SEG 2018.

- [365] Felix Oghenekohwo. *Economic time-lapse seismic acquisition and imaging—Reaping the benefits of randomized sampling with distributed compressive sensing*. PhD thesis, The University of British Columbia, Vancouver, 08 2017. (PhD).
- [366] Felix Oghenekohwo, Ernie Esser, and Felix J. Herrmann. Time-lapse seismic without repetition: reaping the benefits from randomized sampling and joint recovery. In *EAGE Annual Conference Proceedings*, 06 2014.
- [367] Felix Oghenekohwo and Felix J. Herrmann. Assessing the need for repeatability in acquisition of time-lapse data. In *CSEG Annual Conference Proceedings*, 05 2013.
- [368] Felix Oghenekohwo and Felix J. Herrmann. Time-lapse seismics with randomized sampling. Technical Report TR-EOAS-2013-3, UBC, 2013.
- [369] Felix Oghenekohwo and Felix J. Herrmann. Compressive time-lapse seismic data processing using shared information. In *CSEG Annual Conference Proceedings*, 05 2015. (CSEG, Calgary).
- [370] Felix Oghenekohwo and Felix J. Herrmann. A new take on compressive time-lapse seismic acquisition, imaging and inversion. In *PIMS Workshop on Advances in Seismic Imaging and Inversion*, 05 2015. (PIMS Workshop on Advances in Seismic Imaging and Inversion, University of Alberta, Edmonton).
- [371] Felix Oghenekohwo and Felix J. Herrmann. Highly repeatable time-lapse seismic with distributed Compressive Sensing—mitigating effects of calibration errors. *The Leading Edge*, 36(8):688–694, 08 2017. (The Leading Edge).
- [372] Felix Oghenekohwo and Felix J. Herrmann. Improved time-lapse data repeatability with randomized sampling and distributed compressive sensing. In *EAGE Annual Conference Proceedings*, 06 2017. (EAGE, Paris).
- [373] Felix Oghenekohwo, Rajiv Kumar, Ernie Esser, and Felix J. Herrmann. Time-lapse FWI with distributed compressed sensing. In *Inaugural Full-Waveform Inversion Workshop*, 08-09 2015. (Natal, Brazil).
- [374] Felix Oghenekohwo, Rajiv Kumar, Ernie Esser, and Felix J. Herrmann. Using common information in compressive time-lapse full-waveform inversion. In *EAGE Annual Conference Proceedings*, 06 2015. (EAGE, Madrid).
- [375] Felix Oghenekohwo, Rajiv Kumar, and Felix J. Herrmann. Randomized sampling without repetition in time-lapse surveys. In *SEG Technical Program Expanded Abstracts*, pages 4848–4852, 10 2014. (SEG).

- [376] Felix Oghenekohwo, Haneet Wason, Ernie Esser, and Felix J. Herrmann. Low-cost time-lapse seismic with distributed compressive sensing—Part 1: exploiting common information among the vintages. *Geophysics*, 82(3):P1–P13, 05 2017. (Geophysics).
- [377] Ju-Won Oh, Dong-Joo Min, and Felix J. Herrmann. Frequency-domain elastic waveform inversion using weighting factors related to source-deconvolved residuals. In *EAGE Annual Conference Proceedings*, 06 2012.
- [378] Ju-Won Oh, Dong-Joo Min, and Felix J. Herrmann. Re-establishment of gradient in frequency-domain elastic waveform inversion. In *CSEG Annual Conference Proceedings*, 02 2012.
- [379] Bas Peters, Zhilong Fang, Brendan R. Smithyman, and Felix J. Herrmann. Regularizing waveform inversion by projections onto convex sets — application to the 2D Chevron 2014 synthetic blind-test dataset. Technical Report TR-EOAS-2015-7, UBC, 06 2015.
- [380] Bas Peters, Chen Greif, and Felix J. Herrmann. An algorithm for solving least-squares problems with a Helmholtz block and multiple right-hand-sides. In *International Conference On Preconditioning Techniques For Scientific And Industrial Applications*, 06 2015. (PRECON, The Netherlands).
- [381] Bas Peters and Felix J. Herrmann. A sparse reduced hessian approximation for multi-parameter wavefield reconstruction inversion. In *SEG Technical Program Expanded Abstracts*, pages 1206–1210, 10 2014. (SEG).
- [382] Bas Peters and Felix J. Herrmann. Simultaneous estimation of wavefields and medium parameters - reduced-space versus full-space waveform inversion. In *SEG Workshop on The Limit of FWI in Subsurface Parameter Recovery; New Orleans*, 10 2015. (SEG, New Orleans).
- [383] Bas Peters and Felix J. Herrmann. Wavefield-reconstruction inversion. In *Conference on Applied Inverse Problems*, 05 2015. (AIP, Helsinki).
- [384] Bas Peters and Felix J. Herrmann. Constraints versus penalties for edge-preserving full-waveform inversion. *The Leading Edge*, 36(1):94–100, 01 2017. (The Leading Edge).
- [385] Bas Peters, Felix J. Herrmann, and Chen Greif. Matrix-free quadratic-penalty methods for PDE-constrained optimization. In *SIAM Conference on Computational Science and Engineering*, 03 2015. (SIAM, Salt Lake City).
- [386] Bas Peters, Felix J. Herrmann, and Tristan van Leeuwen. Wave-equation based inversion with the penalty method: adjoint-state versus wavefield-reconstruction inversion. In *EAGE Annual Conference Proceedings*, 06 2014.

- [387] Bas Peters, Brendan R. Smithyman, and Felix J. Herrmann. Regularizing waveform inversion by projection onto intersections of convex sets. Technical Report TR-EOAS-2015-4, UBC, 01 2015.
- [388] Bas Peters, Brendan R. Smithyman, and Felix J. Herrmann. Projection methods for nonlinear inverse problems with multiple constraints. Submitted to Geophysics on March 7, 2018., 2018.
- [389] Bas Peters, Tristan van Leeuwen, and Felix J. Herrmann. Parallel reformulation of the sequential adjoint-state method. In *SEG Technical Program Expanded Abstracts*, pages 1411–1415, 10 2016. (SEG, Dallas).
- [390] Art Petrenko. Accelerating an iterative Helmholtz solver using reconfigurable hardware. Master’s thesis, The University of British Columbia, Vancouver, 04 2014. (MSc).
- [391] Art Petrenko, Felix J. Herrmann, Diego Oriato, Simon Tilbury, and Tristan van Leeuwen. Accelerating an iterative Helmholtz solver with FPGAs. In *OGHPC*, 03 2014.
- [392] Art Petrenko, Tristan van Leeuwen, and Felix J. Herrmann. Software acceleration of CARP, an iterative linear solver and preconditioner. HPCS, 06 2013.
- [393] Art Petrenko, Tristan van Leeuwen, and Felix J. Herrmann. Software acceleration of CARP, an iterative linear solver and preconditioner. Technical Report TR-EOAS-2013-4, UBC, 2013.
- [394] Art Petrenko, Tristan van Leeuwen, Diego Oriato, Simon Tilbury, and Felix J. Herrmann. Accelerating an iterative Helmholtz solver with FPGAs. In *EAGE Annual Conference Proceedings*, 06 2014.
- [395] Sean Ross-Ross. Seismic inversion through operator overloading. In *SINBAD 2008*, 2008.
- [396] Sean Ross-Ross, Henryk Modzelewski, Cody R. Brown, and Felix J. Herrmann. *SLIMpy development and programming interface for seismic processing*, 2007.
- [397] Sean Ross-Ross, Henryk Modzelewski, and Felix J. Herrmann. *SLIMPy: a python interface for unix-pipe based coordinate-free scientific computing*, 07 2008.
- [398] Rayan Saab. Curvelet-based primary-multiple separation from a Bayesian perspective. In *SINBAD 2008*, 2008.
- [399] Rayan Saab, Rick Chartrand, and Ozgur Yilmaz. Stable sparse approximations via nonconvex optimization. In *ICASSP*. ICASSP, 2008.



- [400] Rayan Saab, Deli Wang, Ozgur Yilmaz, and Felix J. Herrmann. Curvelet-based primary-multiple separation from a Bayesian perspective. In *SEG Technical Program Expanded Abstracts*, volume 26, pages 2510–2514. SEG, 2007.
- [401] Rayan Saab and Ozgur Yilmaz. A short note on non-convex compressed sensing. In *SAMPTA technical program*. SAMPTA, 2009.
- [402] Rayan Saab and Ozgur Yilmaz. Sparse recovery by non-convex optimization - instance optimality. *Applied and Computational Harmonic Analysis*, 29(1):30–48, 07 2010.
- [403] Challa S. Sastry. Norm-one recovery from irregular sampled data. In *SINBAD 2007*, 2007.
- [404] Challa S. Sastry, Gilles Hennenfent, and Felix J. Herrmann. Recovery from unstructured data. In *SINBAD 2006*, 2006.
- [405] Challa S. Sastry, Gilles Hennenfent, and Felix J. Herrmann. Signal reconstruction from incomplete and misplaced measurements. In *EAGE Annual Conference Proceedings*, 06 2007.
- [406] Reza Shahidi and Felix J. Herrmann. Curvelet-domain matched filtering with frequency-domain regularization. In *SEG Technical Program Expanded Abstracts*, volume 28, pages 3645–3649. SEG, 10 2009.
- [407] Reza Shahidi, Gang Tang, Jianwei Ma, and Felix J. Herrmann. Application of randomized sampling schemes to curvelet-based sparsity-promoting seismic data recovery. *Geophysical Prospecting*, 61(5):973–997, 09 2013.
- [408] Shashin Sharan, Rajiv Kumar, Rongrong Wang, and Felix J. Herrmann. A debiasing approach to microseismic. 2018. Accepted for SEG 2018.
- [409] Shashin Sharan, Rongrong Wang, and Felix J. Herrmann. High resolution fast microseismic source collocation and source time function estimation. In *SEG Technical Program Expanded Abstracts*, pages 2778–2783, 09 2017. (SEG, Houston).
- [410] Shashin Sharan, Rongrong Wang, and Felix J. Herrmann. Fast sparsity-promoting microseismic source inversion. Submitted to GJI on April 15, 2018., 2018.
- [411] Shashin Sharan, Rongrong Wang, Tristan van Leeuwen, and Felix J. Herrmann. Sparsity-promoting joint microseismic source collocation and source-time function estimation. In *SEG Technical Program Expanded Abstracts*, pages 2574–2579, 10 2016. (SEG, Dallas).
- [412] Ali Siahkoohi, Rajiv Kumar, and Felix J. Herrmann. Seismic data reconstruction with generative adversarial networks. In *EAGE Annual Conference Proceedings*, 06 2018. (EAGE, Copenhagen).

- [413] Ali Siahkoohi, Mathias Louboutin, Rajiv Kumar, and Felix J. Herrmann. Deep convolutional neural networks in prestack seismic—two exploratory examples. 2018. Accepted for SEG 2018.
- [414] Curt Da Silva. *Large-scale optimization algorithms for missing data completion and inverse problems*. PhD thesis, The University of British Columbia, Vancouver, 09 2017. (PhD).
- [415] Curt Da Silva and Felix J. Herrmann. Hierarchical Tucker tensor optimization - applications to 4D seismic data interpolation. In *EAGE Annual Conference Proceedings*, 06 2013.
- [416] Curt Da Silva and Felix J. Herrmann. Hierarchical Tucker tensor optimization - applications to tensor completion. 07 2013.
- [417] Curt Da Silva and Felix J. Herrmann. Structured tensor missing-trace interpolation in the Hierarchical Tucker format. In *SEG Technical Program Expanded Abstracts*, volume 32, pages 3623–3627. SEG, 09 2013.
- [418] Curt Da Silva and Felix J. Herrmann. Low-rank promoting transformations and tensor interpolation - applications to seismic data denoising. In *EAGE Annual Conference Proceedings*, 06 2014.
- [419] Curt Da Silva and Felix J. Herrmann. Irregular grid tensor completion. In *Workshop on Low-rank Optimization and Applications*, 06 2015. (Workshop on Low-rank Optimization and Applications, University of Bonn, Germany).
- [420] Curt Da Silva and Felix J. Herrmann. Off the grid tensor completion for seismic data interpolation. In *EAGE Annual Conference Proceedings*, 06 2015. (EAGE, Madrid).
- [421] Curt Da Silva and Felix J. Herrmann. Optimization on the Hierarchical Tucker manifold - applications to tensor completion. *Linear Algebra and its Applications*, 481:131–173, 09 2015. (Linear Algebra and its Applications).
- [422] Curt Da Silva and Felix J. Herrmann. A unified 2D/3D software environment for large scale time-harmonic full waveform inversion. In *SEG Technical Program Expanded Abstracts*, pages 1169–1173, 10 2016. (SEG, Dallas).
- [423] Curt Da Silva and Felix J. Herrmann. A unified 2D/3D large scale software environment for nonlinear inverse problems. Submitted to ACM Transactions on Mathematical Software on February 14, 2017., 2017.
- [424] Curt Da Silva, Yiming Zhang, Rajiv Kumar, and Felix J. Herrmann. Applications of low-rank compressed seismic data to full waveform inversion and extended image volumes. Submitted to Geophysics on February 9, 2018., 2018.

- [425] Brendan R. Smithyman, Bas Peters, Bryan DeVault, and Felix J. Herrmann. Joint full-waveform inversion of on-land surface and VSP data from the Permian Basin. Technical Report TR-EOAS-2014-4, UBC, 04 2014.
- [426] Brendan R. Smithyman, Bas Peters, and Felix J. Herrmann. Constrained waveform inversion of colocated VSP and surface seismic data. In *EAGE Annual Conference Proceedings*, 06 2015. (EAGE, Madrid).
- [427] Gang Tang, Reza Shahidi, Felix J. Herrmann, and Jianwei Ma. Higher dimensional blue-noise sampling schemes for curvelet-based seismic data recovery. In *SEG Technical Program Expanded Abstracts*, volume 28, pages 191–195. SEG, 10 2009.
- [428] Gang Tang, Reza Shahidi, and Jianwei Ma. Design of two-dimensional randomized sampling schemes for curvelet-based sparsity-promoting seismic data recovery. Technical Report TR-EOAS-2009-3, UBC Earth and Ocean Sciences Department, 2009.
- [429] Darren Thomson. Large-scale seismic data recovery by the parallel windowed curvelet transform. In *SINBAD 2006*, 2006.
- [430] Darren Thomson. (P)SLIMPy: parallel extension. In *SINBAD 2006*, 2006.
- [431] Darren Thomson, Gilles Hennenfent, Henryk Modzelewski, and Felix J. Herrmann. A parallel windowed fast discrete curvelet transform applied to seismic processing. In *SEG Technical Program Expanded Abstracts*, volume 25, pages 2767–2771. SEG, 2006.
- [432] Valentin Tschannen, Zhilong Fang, and Felix J. Herrmann. Time domain least squares migration and dimensionality reduction. Technical Report TR-EOAS-2014-9, UBC, 06 2014.
- [433] Ning Tu. *Fast imaging with surface-related multiples*. PhD thesis, The University of British Columbia, Vancouver, 08 2015. (PhD).
- [434] Ning Tu, Aleksandr Y. Aravkin, Tristan van Leeuwen, and Felix J. Herrmann. Fast least-squares migration with multiples and source estimation. In *EAGE Annual Conference Proceedings*, 06 2013.
- [435] Ning Tu, Aleksandr Y. Aravkin, Tristan van Leeuwen, Tim T.Y. Lin, and Felix J. Herrmann. Source estimation with surface-related multiples—fast ambiguity-resolved seismic imaging. *Geophysical Journal International*, 205:1492–1511, 03 2016. (published online in Geophysical Journal International).
- [436] Ning Tu and Felix J. Herrmann. Imaging with multiples accelerated by message passing. In *SEG Technical Program Expanded Abstracts*, volume 31, pages 1–6. SEG, 11 2012.

- [437] Ning Tu and Felix J. Herrmann. Least-squares migration of full wavefield with source encoding. In *EAGE Annual Conference Proceedings*, 06 2012.
- [438] Ning Tu and Felix J. Herrmann. Fast linearized inversion with surface-related multiples with source estimation. In *SEG Workshop on Using Multiples as Signal for Imaging; Denver*, 10 2014. (SEG Workshop, Denver).
- [439] Ning Tu and Felix J. Herrmann. Fast imaging with surface-related multiples by sparse inversion. *Geophysical Journal International*, 201(1):304–317, 04 2015. (Geophysical Journal International).
- [440] Ning Tu and Felix J. Herrmann. Fast least-squares imaging with surface-related multiples: application to a North-Sea data set. *The Leading Edge*, 34(7):788–794, 07 2015. (The Leading Edge).
- [441] Ning Tu and Felix J. Herrmann. Sparse least-squares seismic imaging with source estimation utilizing multiples. In *PIMS Workshop on Advances in Seismic Imaging and Inversion*, 05 2015. (PIMS Workshop on Advances in Seismic Imaging and Inversion, University of Alberta, Edmonton).
- [442] Ning Tu, Xiang Li, and Felix J. Herrmann. Controlling linearization errors in  $\ell_1$  regularized inversion by rerandomization. In *SEG Technical Program Expanded Abstracts*, volume 32, pages 4640–4644, 09 2013.
- [443] Ning Tu, Tim T.Y. Lin, and Felix J. Herrmann. Migration with surface-related multiples from incomplete seismic data. In *SEG Technical Program Expanded Abstracts*, volume 30, pages 3222–3227. SEG, 09 2011.
- [444] Ning Tu, Tim T.Y. Lin, and Felix J. Herrmann. Sparsity-promoting migration with surface-related multiples. In *EAGE Annual Conference Proceedings*, 05 2011.
- [445] Ning Tu, Tristan van Leeuwen, and Felix J. Herrmann. Limitations of the deconvolutional imaging condition for two-way propagators. In *SEG Technical Program Expanded Abstracts*, volume 32, pages 3916–3920, 09 2013.
- [446] Ewout van den Berg. Exact sparse reconstruction and neighbourly polytopes. In *IAM*, 2008.
- [447] Ewout van den Berg. Sparco: A testing framework for sparse reconstruction. In *SINBAD 2008*, 2008.
- [448] Ewout van den Berg and Michael P. Friedlander. In pursuit of a root. Von Neumann Symposium, 07 2007.
- [449] Ewout van den Berg and Michael P. Friedlander. In pursuit of a root. In *2007 Von Neumann Symposium*, 2007.

- [450] Ewout van den Berg and Michael P. Friedlander. In pursuit of a root. Technical Report TR-EOAS-2007-19, Department of Computer Science, University of British Columbia, Vancouver, 06 2007.
- [451] Ewout van den Berg and Michael P. Friedlander. *SPARCO: a toolbox for testing sparse reconstruction algorithms*, 10 2007.
- [452] Ewout van den Berg and Michael P. Friedlander. Probing the Pareto frontier for basis pursuit solutions. *SIAM Journal on Scientific Computing*, 31(2):890–912, 01 2008.
- [453] Ewout van den Berg and Michael P. Friedlander. Spot: A linear-operator toolbox for matlab. In *SCAIM*, University of British Columbia, 2009. SCAIM Seminar.
- [454] Ewout van den Berg and Michael P. Friedlander. Theoretical and empirical results for recovery from multiple measurements. *IEEE Transactions on Information Theory*, 56(5):2516–2527, 05 2010.
- [455] Ewout van den Berg and Michael P. Friedlander. Sparse optimization with least-squares constraints. *SIAM Journal on Optimization*, 21(4):1201–1229, 11 2011.
- [456] Ewout van den Berg, Michael P. Friedlander, Gilles Hennenfent, Felix J. Herrmann, Rayan Saab, and Ozgur Yilmaz. Sparco: a testing framework for sparse reconstruction. *ACM Transactions on Mathematical Software*, 35(4):1–16, 02 2009.
- [457] Ewout van den Berg, Mark Schmidt, Michael P. Friedlander, and K. Murphy. Group sparsity via linear-time projection. Technical Report TR-2008-09, UBC - Department of Computer Science, 06 2008.
- [458] Ewout van den Berg, Mark Schmidt, Michael P. Friedlander, and K. Murphy. Optimizing costly functions with simple constraints: a limited-memory projected Quasi-Newton algorithm. In *SLIM*, volume 12 of *Twelfth International Conference on Artificial Intelligence and Statistics*, 04 2009.
- [459] Joost van der Neut and Felix J. Herrmann. Up / down wavefield decomposition by sparse inversion. In *EAGE Annual Conference Proceedings*, 06 2012.
- [460] Joost van der Neut and Felix J. Herrmann. Interferometric redatuming by sparse inversion. *Geophysical Journal International*, 192:666–670, 02 2013.
- [461] Joost van der Neut, Felix J. Herrmann, and Kees Wapenaar. Interferometric redatuming with simultaneous and missing sources using sparsity promotion in the curvelet domain. In *SEG Technical Program Expanded Abstracts*, volume 31, pages 1–7. SEG, 11 2012.

- [462] Tristan van Leeuwen. A correlation-based misfit criterion for wave-equation traveltime tomography. In *ICIAM*. ICIAM 2011, 07 2011. Presented at ICIAM 2011, Vancouver BC.
- [463] Tristan van Leeuwen. Fourier analysis of the CGMN method for solving the Helmholtz equation. Technical Report TR-EOAS-2012-1, Department of Earth, Ocean and Atmospheric Sciences, The University of British Columbia, Vancouver, 2012.
- [464] Tristan van Leeuwen. A parallel matrix-free framework for frequency-domain seismic modelling, imaging and inversion in matlab. Technical Report TR-EOAS-2012-5, 07 2012.
- [465] Tristan van Leeuwen, Aleksandr Y. Aravkin, Henri Calandra, and Felix J. Herrmann. In which domain should we measure the misfit for robust full waveform inversion? In *EAGE Annual Conference Proceedings*, 06 2013.
- [466] Tristan van Leeuwen, Aleksandr Y. Aravkin, and Felix J. Herrmann. Seismic waveform inversion by stochastic optimization. *International Journal of Geophysics*, 2011, 12 2011. Article ID: 689041, 18pages.
- [467] Tristan van Leeuwen, Aleksandr Y. Aravkin, and Felix J. Herrmann. Comment on: “application of the variable projection scheme for frequency-domain full-waveform inversion” (m. li, j. rickett, and a. abubakar, geophysics, 78, no. 6, r249–r257). *Geophysics*, 79(3):X11–X17, 05 2014. (discussion by Tristan van Leeuwen, Aleksandr Y. Aravkin, and Felix J. Herrmann).
- [468] Tristan van Leeuwen, Dan Gordon, Rachel Gordon, and Felix J. Herrmann. Preconditioning the Helmholtz equation via row-projections. In *EAGE Annual Conference Proceedings*, 06 2012.
- [469] Tristan van Leeuwen and Felix J. Herrmann. Probing the extended image volume. In *SEG Technical Program Expanded Abstracts*, volume 30, pages 4045–4050. SEG, 09 2011.
- [470] Tristan van Leeuwen and Felix J. Herrmann. Probing the extended image volume for seismic velocity inversion. In *WAVES*. Waves 2011, 07 2011.
- [471] Tristan van Leeuwen and Felix J. Herrmann. A parallel, object-oriented framework for frequency-domain wavefield imaging and inversion. Technical Report TR-EOAS-2012-2, Department of Earth and Ocean Sciences, University of British Columbia, Vancouver, 04 2012.
- [472] Tristan van Leeuwen and Felix J. Herrmann. Wave-equation extended images: computation and velocity continuation. In *EAGE Annual Conference Proceedings*, 06 2012.

- [473] Tristan van Leeuwen and Felix J. Herrmann. Fast waveform inversion without source encoding. *Geophysical Prospecting*, 61:10–19, 06 2013. Article first published online: 10 JULY 2012.
- [474] Tristan van Leeuwen and Felix J. Herrmann. Mitigating local minima in full-waveform inversion by expanding the search space. *Geophysical Journal International*, 195:661–667, 10 2013.
- [475] Tristan van Leeuwen and Felix J. Herrmann. A penalty method for PDE-constrained optimization. Technical Report TR-EOAS-2013-6, UBC, 04 2013.
- [476] Tristan van Leeuwen and Felix J. Herrmann. A penalty method for pde-constrained optimization with applications to wave-equation based seismic inversion. In *SEG Workshop on Computational Mathematics for Geophysics; Houston*, 09 2013.
- [477] Tristan van Leeuwen and Felix J. Herrmann. 3D frequency-domain seismic inversion with controlled sloppiness. *SIAM Journal on Scientific Computing*, 36(5):S192–S217, 10 2014. (SISC).
- [478] Tristan van Leeuwen and Felix J. Herrmann. A penalty method for PDE-constrained optimization in inverse problems. *Inverse Problems*, 32(1):015007, 12 2015. (Inverse Problems).
- [479] Tristan van Leeuwen, Felix J. Herrmann, and Bas Peters. A new take on FWI: wavefield reconstruction inversion. In *EAGE Annual Conference Proceedings*, 06 2014.
- [480] Tristan van Leeuwen, Felix J. Herrmann, Mark Schmidt, and Michael P. Friedlander. A hybrid stochastic-deterministic optimization method for waveform inversion. In *EAGE Annual Conference Proceedings*, 05 2011.
- [481] Tristan van Leeuwen, Rajiv Kumar, and Felix J. Herrmann. Affordable full subsurface image volume—an application to WEMVA. In *EAGE Annual Conference Proceedings*, 06 2015. (EAGE Workshop on Wave Equation based Migration Velocity Analysis, Madrid).
- [482] Tristan van Leeuwen, Rajiv Kumar, and Felix J. Herrmann. Enabling affordable omnidirectional subsurface extended image volumes via probing. *Geophysical Prospecting*, 65(2):385–406, 03 2017. (Geophysical Prospecting).
- [483] Tristan van Leeuwen and Wim A. Mulder. Multiscale aspects of waveform tomography. In *SIAMGEO*. SIAM GeoSciences 2011, 2011.
- [484] Tristan van Leeuwen, Mark Schmidt, Michael P. Friedlander, and Felix J. Herrmann. A hybrid stochastic-deterministic method for waveform inversion. In *AMP. WAVES 2011*, 07 2011. Presented at AMP Medical and Seismic Imaging, 2011, Vancouver BC.

- [485] D. J. Verschuur, Deli Wang, and Felix J. Herrmann. Multiterm multiple prediction using separated reflections and diffractions combined with curvelet-based subtraction. In *SEG Technical Program Expanded Abstracts*, volume 26, pages 2535–2539. SEG, 2007.
- [486] Deli Wang, Rayan Saab, Ozgur Yilmaz, and Felix J. Herrmann. Recent results in curvelet-based primary-multiple separation: application to real data. In *SEG Technical Program Expanded Abstracts*, volume 26, pages 2500–2504. SEG, 2007.
- [487] Deli Wang, Rayan Saab, Ozgur Yilmaz, and Felix J. Herrmann. Bayesian wavefield separation by transform-domain sparsity promotion. *Geophysics*, 73(5):1–6, 07 2008.
- [488] Deli Wang, Rayan Saab, Ozgur Yilmaz, and Felix J. Herrmann. Recent results in curvelet-based primary-multiple separation. In *SINBAD 2008*, 2008.
- [489] Rongrong Wang and Felix J. Herrmann. Frequency down-extrapolation with TV norm minimization. In *SEG Technical Program Expanded Abstracts*, pages 1380–1384, 10 2016. (SEG, Dallas).
- [490] Rongrong Wang and Felix J. Herrmann. A denoising formulation of full-waveform inversion. In *SEG Technical Program Expanded Abstracts*, pages 1594–1598, 09 2017. (SEG, Houston).
- [491] Rongrong Wang, Ozgur Yilmaz, and Felix J. Herrmann. Full waveform inversion with interferometric measurements. Technical Report TR-EOAS-2014-5, UBC, 04 2014.
- [492] Rongrong Wang, Ozgur Yilmaz, and Felix J. Herrmann. Wavefield-denoising and source encoding. In *SIAM Conference on Mathematical and Computational Issues in the Geosciences*, 06-07 2015. (SIAM Conference on Mathematical and Computational Issues in the Geosciences, Stanford University, California).
- [493] Haneet Wason. *Simultaneous-source seismic data acquisition and processing with compressive sensing*. PhD thesis, The University of British Columbia, Vancouver, 08 2017. (PhD).
- [494] Haneet Wason and Felix J. Herrmann. Only dither: efficient simultaneous marine acquisition. In *CSEG Annual Conference Proceedings*, 02 2012.
- [495] Haneet Wason and Felix J. Herrmann. Only dither: efficient simultaneous marine acquisition. In *EAGE Annual Conference Proceedings*, 06 2012.
- [496] Haneet Wason and Felix J. Herrmann. Ocean bottom seismic acquisition via jittered sampling. In *EAGE Annual Conference Proceedings*, 06 2013.



- [497] Haneet Wason and Felix J. Herrmann. Time-jittered ocean bottom seismic acquisition. In *SEG Technical Program Expanded Abstracts*, volume 32, pages 1–6, 09 2013.
- [498] Haneet Wason, Felix J. Herrmann, and Tim T.Y. Lin. Sparsity-promoting recovery from simultaneous data: a compressive sensing approach. In *SEG Technical Program Expanded Abstracts*, volume 30, pages 6–10. SEG, 09 2011.
- [499] Haneet Wason, Rajiv Kumar, Aleksandr Y. Aravkin, and Felix J. Herrmann. Source separation via SVD-free rank minimization in the hierarchical semi-separable representation. In *SEG Technical Program Expanded Abstracts*, pages 120–126, 10 2014. (SEG).
- [500] Haneet Wason, Felix Oghenekohwo, and Felix J. Herrmann. Randomization and repeatability in time-lapse marine acquisition. In *SEG Technical Program Expanded Abstracts*, pages 46–51, 10 2014. (SEG).
- [501] Haneet Wason, Felix Oghenekohwo, and Felix J. Herrmann. Randomization and repeatability in time-lapse marine acquisition. In *EAGE Workshop on Land and Ocean Bottom; Broadband Full Azimuth Seismic Surveys; Spain*, 04 2014. (EAGE Workshop, Spain).
- [502] Haneet Wason, Felix Oghenekohwo, and Felix J. Herrmann. Compressed sensing in 4-D marine—recovery of dense time-lapse data from subsampled data without repetition. In *EAGE Annual Conference Proceedings*, 06 2015. (EAGE, Madrid).
- [503] Haneet Wason, Felix Oghenekohwo, and Felix J. Herrmann. Low-cost time-lapse seismic with distributed compressive sensing—Part 2: impact on repeatability. *Geophysics*, 82(3):P15–P30, 05 2017. (Geophysics).
- [504] Philipp A. Witte, Mathias Louboutin, Gerard Gorman, and Felix J. Herrmann. A large-scale time-domain seismic modeling and inversion workflow in Julia. Technical Report TR-EOAS-2017-1, UBC, 2017.
- [505] Philipp A. Witte, Mathias Louboutin, and Felix J. Herrmann. Overview on anisotropic modeling and inversion. Technical Report TR-EOAS-2015-6, UBC, 08 2015.
- [506] Philipp A. Witte, Mathias Louboutin, and Felix J. Herrmann. Time-domain FWI in TTI media. In *Inaugural Full-Waveform Inversion Workshop*, 08-09 2015. (Natal, Brazil).
- [507] Philipp A. Witte, Mathias Louboutin, and Felix J. Herrmann. Large-scale workflows for wave-equation based inversion in Julia. In *SIAM Conference on Computational Science and Engineering*, 02-03 2017. (SIAM Conference on Computational Science and Engineering, Atlanta).

- [508] Philipp A. Witte, Mathias Louboutin, Navjot Kukreja, Fabio Luporini, Michael Lange, Gerard J. Gorman, and Felix J. Herrmann. A large-scale framework for symbolic implementations of seismic inversion algorithms in julia. Submitted to Geophysics on March 1, 2018., 2018.
- [509] Philipp A. Witte, Mathias Louboutin, Keegan Lensink, Michael Lange, Navjot Kukreja, Fabio Luporini, Gerard Gorman, and Felix J. Herrmann. Full-waveform inversion - part 3: optimization. *The Leading Edge*, 37(2):142–145, 1 2018. (The Leading Edge).
- [510] Philipp A. Witte, Mathias Louboutin, Fabio Luporini, Gerard J. Gorman, and Felix J. Herrmann. Compressive least-squares migration with on-the-fly fourier transforms. Submitted to Geophysics on June 28, 2018., 2018.
- [511] Philipp A. Witte, Christiaan C. Stolk, and Felix J. Herrmann. Phase velocity error minimizing scheme for the anisotropic pure P-wave equation. In *SEG Technical Program Expanded Abstracts*, pages 452–457, 10 2016. (SEG, Dallas).
- [512] Philipp A. Witte, Ning Tu, Ernie Esser, Mengmeng Yang, Mathias Louboutin, and Felix J. Herrmann. Sparsity-promoting least-square migration with linearized Bregman and compressive sensing. In *Inaugural Full-Waveform Inversion Workshop*, 08-09 2015. (Natal, Brazil).
- [513] Philipp A. Witte, Mengmeng Yang, and Felix J. Herrmann. Compressive least-squares migration with source estimation. Technical Report TR-EOAS-2017-3, UBC, 2017.
- [514] Philipp A. Witte, Mengmeng Yang, and Felix J. Herrmann. Sparsity-promoting least-squares migration with the linearized inverse scattering imaging condition. In *EAGE Annual Conference Proceedings*, 06 2017. (EAGE, Paris).
- [515] Jiupeng Yan. Wavefield reconstruction using simultaneous denoising interpolation vs. denoising after interpolation. In *SINBAD 2008*, 2008.
- [516] Jiupeng Yan and Felix J. Herrmann. Groundroll prediction by interferometry and separation by curvelet-domain filtering. In *SEG Technical Program Expanded Abstracts*, 2009.
- [517] Jiupeng Yan and Felix J. Herrmann. Groundroll prediction by interferometry and separation by curvelet-domain matched filtering. In *SEG Technical Program Expanded Abstracts*, volume 28, pages 3297–3301. SEG, 10 2009.
- [518] Mengmeng Yang, Emmanouil Daskalakis, and Felix J. Herrmann. Fast sparsity-promoting least-squares migration with multiples in time domain. In *SEG Technical Program Expanded Abstracts*, pages 4828–4832, 09 2017. (SEG, Houston).

- [519] Mengmeng Yang and Felix J. Herrmann. Time domain sparsity promoting lsrtm with surface-related multiples in shallow-water case. In *SEG Workshop on Multiples: Status, Progress, Challenges and Open issues; Houston*, 09 2017. (SEG Workshop, Houston).
- [520] Mengmeng Yang, Rajiv Kumar, Rongrong Wang, and Felix J. Herrmann. Removing density effects in ls-rtm with a low-rank matched filter. 2018. Accepted for SEG 2018.
- [521] Mengmeng Yang, Philipp A. Witte, Zhilong Fang, and Felix J. Herrmann. Time-domain sparsity-promoting least-squares migration with source estimation. In *SEG Technical Program Expanded Abstracts*, pages 4225–4229, 10 2016. (SEG, Dallas).
- [522] Carson Yarham. Nonlinear surface wave prediction and separation. In *SINBAD 2007*, 2007.
- [523] Carson Yarham. Bayesian signal separation applied to ground-roll removal. In *SINBAD 2008*, 2008.
- [524] Carson Yarham. Seismic ground-roll separation using sparsity promoting  $\ell_1$  minimization. Master’s thesis, The University of British Columbia, Vancouver, 05 2008. (MSc).
- [525] Carson Yarham, Urs Boeniger, and Felix J. Herrmann. Curvelet-based ground roll removal. In *SEG Technical Program Expanded Abstracts*, volume 25, pages 2777–2782. SEG, 2006.
- [526] Carson Yarham, Gilles Hennenfent, and Felix J. Herrmann. Curvelet applications in surface wave removal. In *EAGE Workshop on Curvelets, contourlets, seislets, ... in seismic data processing - where are we and where are we going?*, 06 2007.
- [527] Carson Yarham and Felix J. Herrmann. Bayesian ground-roll separation by curvelet-domain sparsity promotion. In *SEG Technical Program Expanded Abstracts*, volume 27, pages 2576–2580. SEG, 11 2008.
- [528] Carson Yarham, Felix J. Herrmann, and Daniel Trad. Ground roll removal using non-separable wavelet transforms. In *CSEG Annual Conference Proceedings*, 2004.
- [529] Carson Yarham, Daniel Trad, and Felix J. Herrmann. Curvelet processing and imaging: adaptive ground roll removal. In *CSEG Annual Conference Proceedings*. CSEG, 05 2004.
- [530] Can Evren Yarman, Rajiv Kumar, and James Rickett. A model based data driven dictionary learning for seismic data representation. *Geophysical Prospecting*, 04 2017. (published online in Geophysical Prospecting).

- [531] Ozgur Yilmaz. Stable sparse expansions via non-convex optimization. In *SINBAD 2008*, 2008.
- [532] Yiming Zhang. Large-scale seismic data compression: application to full waveform inversion and extended image volume. Master’s thesis, The University of British Columbia, Vancouver, 04 2018. (MSc).
- [533] Yiming Zhang, Curt Da Silva, Rajiv Kumar, and Felix J. Herrmann. Massive 3D seismic data compression and inversion with hierarchical Tucker. In *SEG Technical Program Expanded Abstracts*, pages 1347–1352, 09 2017. (SEG, Houston).
- [534] Polina Zheglova and Felix J. Herrmann. Application of matrix square root and its inverse to downward wavefield extrapolation. In *EAGE Annual Conference Proceedings*, 06 2014.