

List of Publications

Toby Sanders

**Note that hyperlinks to access the papers are embedded in this document for most publications.*

Peer Reviewed Articles

1. T. Sanders, R. Platte, R. Skeel. Effective new methods for automated parameter selection in regularized inverse problems. *Applied Numerical Mathematics* (2020).
2. T. Sanders, C. Dwyer. Image inpainting vs denoising in the presence of Poisson noise. *IEEE Transactions on Image Processing* (2019).
3. T. Sanders, R. B. Platte. Multiscale Higher Order TV Operators for L_1 Regularization. *Advanced Structural and Chemical Imaging*, 4(1), 12.
4. Toby Sanders. Phase-based alignment and improved projection matching of parallel beam tomography data. *IEEE Trans. Computational Imaging*, 4(3):395-405, 2018.
5. T. Sanders. "Parameter selection for HOTV regularization." *Applied Numerical Mathematics* 125 (2018): 1-9.
6. Sanders, Toby, and Ilke Arslan. Improved Three-Dimensional (3D) Resolution of Electron Tomograms Using Robust Mathematical Data-Processing Techniques. *Microscopy and Microanalysis* (2017): 1-9.
7. Ramos, M., Galindo-Hernández, F., Arslan, I., Sanders, T., & Domínguez, J. M. (2017). Electron tomography and fractal aspects of MoS₂ and MoS₂/Co spheres. *Scientific reports*, 7(1), 12322.
8. T. Sanders, and C. Dwyer. "Subsampling and inpainting approaches for electron tomography." *Ultramicroscopy* 182 (2017): 292-302.
9. T. Sanders, A. Gelb, and R.B. Platte. Composite SAR imaging using sequential joint sparsity. *Journal of Computational Physics* 338 (2017): 357-370.
10. M. Mandal, C. Liu, T. Sanders, F. Haso, V. Bhadram, I. Arslan, T. Liu, Y. Fei, K. Landskron. Periodic Mesoporous Hexagonal Boron Nitride at High Pressure: A Route to Cubic Boron Nitride Nanocrystals and Mesoporous Cubic Boron Nitride. *ChemistrySelect* 2017, 2, 740.
11. T. Sanders, A. Gelb, R.B. Platte, I. Arslan, K. Landskron. Recovering fine details from under-resolved electron tomography data using higher order total variation ℓ_1 regularization. *Ultramicroscopy* 174 (2017): 97-105.
12. T. Sanders. Discrete Iterative Partial Segmentation Technique (DIPS) for Tomographic Reconstruction, in *IEEE Transactions on Computational Imaging*, vol. 2, no. 1, pp. 71-82, March 2016.
13. T. Sanders, H. Wang. Colonel Blotto's Combinatorial Decisions - A Resource Allocation Problem. *Advances and Applications in Discrete Math*, vol. 15, no. 2, (2015) pp. 145-152.
14. T. Sanders, C. Akatay, M. Prange, P. Binev, Physically Motivated Global Alignment Method for Electron Tomography, *Advanced Structural and Chemical Imaging* vol. 1, no. 1, (2015)

Preprints/Submitted/Other

1. T. Sanders. Fourier Analysis, Computing, and Image Formation For Synthetic Aperture Radar. *arXiv preprint arXiv:1910.10236* (2019).
2. T. Sanders. MATLAB Imaging Algorithms: Image Reconstruction, Restoration, and Alignment, with a Focus in Tomography., <http://www.toby-sanders.com/software>, <https://doi.org/10.13140/RG.2.2.33492.60801>, Dec. 2016
3. T. Sanders, "Image Processing and 3-D Reconstruction in Tomography," PhD Dissertation, Major Professor: Dr. Peter Binev, University of South Carolina, May 2015.

Conference Proceedings

1. T. Sanders, R. Hedges, T. Schulz, M. Abijaoude, J. Peters, M. Steinbock, and T. Holmes, Real-time deconvolution of adaptive optics ground based telescope imagery, in *Proceedings of the Advanced Maui Optical and Space Surveillance Technologies Conference*, 2020
2. T. Sanders, The potential for Poisson image reconstruction models for electron tomography, *SPIE Optics + Photonics 2018*
3. T. Sanders, C. Dwyer, Inpainting versus denoising for dose reduction in STEM, *Microscopy and Microanalysis 2018*
4. T. Sanders, T. Scarnati, Combination of correlated phase error correction and sparsity models for SAR, *SPIE Commercial + Scientific Sensing and Imaging*, 2017.
5. T. Sanders, M. Prange, P. Binev, C. Akatay and I. Arslan. Robust Physical Alignment Models for Electron Tomography. *Microscopy and Microanalysis*, 21 (Suppl. 3) , pp 2335-2336. doi:10.1017/S1431927615012453, 2105
6. T. Sanders, J.D. Roehling, K.J. Batenburg, B.C. Gates, A. Katz, P. Binev, I. Arslan, Advanced 3-D Reconstruction Algorithms for Electron Tomography, *Microscopy and Microanalysis (M&M 2014)*, #397
7. T. Sanders, P. Binev, I. Arslan, Practical 3-D Reconstruction Techniques for Electron Tomography, *invited speaker, BIRS workshop #14w5048*, 2014