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-HernÃ¡ndez, F., Arslan, I., Sanders, T., & DomÃnguez, 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 and S. Larkin. New Computational Techniques for a Faster Variation of BM3D Image Denoising. Submitted to IEEE. Trans. on Comp. Im. (2021).

2. T. Sanders, R. B. Platte, C. Dwyer. Fourier Analysis, Computing, and Image Formation For Synthetic Aperture Radar. *arXiv preprint arXiv:1910.10236* (2019).

3. 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

4. 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