List of publications

Christian Wülker

March 24, 2019

Journal articles/book chapters

[1] J. Prestin and C. Wülker*. Translation matrix elements for spherical Gauss-Laguerre basis functions. *GEM Int. J. Geomath.*, 10(1):#6, 2019 (doi:10.1007/s13137-019-0124-8, www, arxiv, researchgate).

[2] J. Prestin and C. Wülker*. Fast Fourier transforms for spherical Gauss-Laguerre basis functions. In I. Pesenson, Q. T. Le Gia, A. Mayeli, H. Mhaskar, and D.-X. Zhou, editors, *Novel Methods in Harmonic Analysis, Vol.1: Frames and Other Bases in Abstract and Function Spaces*, Applied and Numerical Harmonic Analysis, PP. 237–263. Birkhäuser Basel, 2017 (doi:10.1007/978-3-319-55550-8_11, www, arxiv, researchgate).

[3] C. Wülker*, A. Sitek, and S. Prevrhal. Time-of-flight PET image reconstruction using origin ensembles. *Phys. Med. Biol.*, 60(5):1919–1944, 2015 (doi:10.1088/0031-9155/60/5/1919, www, preprint, researchgate).

[4] S. Prevrhal*, S. Heinzer, C. Wülker, S. Renisch, O. Ratib, and P. Börnert. Fat-constrained 18F-FDG PET reconstruction in hybrid PET/MR imaging. *J. Nucl. Med.*, 55(10):1643–1649, 2014 (doi:10.2967/jnumed.114.139758, www, researchgate).

Conference proceedings papers

[5] C. Wülker*, S. Heinzer, P. Börnert, S. Renisch, and S. Prevrhal. Fat-constrained 18F-FDG PET reconstruction using Dixon MR imaging and the origin ensemble algorithm. In *Proc. SPIE 9412, Medical Imaging 2015: Physics of Medical Imaging*, Orlando, FL, USA, 2015 (doi:10.1117/12.2081161, www, preprint, researchgate).

Unpublished work

[6] T. W. Mitchel*, C. Wülker, J. S. Kim, S. Ruan, and G. S. Chirikjian. Quotienting impertinent camera kinematics for 3d video stabilization. 2019 (submitted, arxiv, researchgate).

[7] C. Wülker* and G. S. Chirikjian. Quantizing Euclidean motions via double-coset decomposition. 2018 (submitted, arxiv, researchgate).

[8] C. Wülker*. Fast SGL Fourier transforms for scattered data. 2018 (submitted, arxiv, researchgate).

[9] D.-M. Lux, C. Wülker*, and G. S. Chirikjian. Parallelization of the FFT on SO(3). 2018 (submitted, arxiv, researchgate).

List of conference/workshop contributions

[10] C. Wülker, D.-M. Lux, and G. S. Chirikjian. Parallelization of the FFT on SO(3). Poster session within *February Fourier Talks*, College Park, MD, USA, 2019.

[11] C. Wülker. Fast SGL Fourier transforms for scattered data. *Modeling, Analysis, and Approximation Theory toward Applications in Tomography and Inverse Problems*, Braunschweig, 2018.

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[12] _____. Fast SGL Fourier transforms for scattered data. *Workshop "Geomathematics Meets Medical Imaging"* (GEMMI), Speyer, 2017.

[13] _____. Fast Fourier transforms for spherical Gauss-Laguerre basis functions. *Approximation Methods for Molecular Modelling and Diagnosis Tools* (AMMODIT), Kiev, Ukraine, 2017.

[14] _____. Fast Fourier transforms for spherical Gauss-Laguerre basis functions. *Mecklenburg Workshop "Approximation Methods and Data Analysis,"* Schloss Hasenwinkel, Germany, 2016.

[15] _____. Towards a fast Fourier transform for spherical Gauss-Laguerre basis functions. *Mathematics for Life Sciences*, Rivne, Ukraine, 2015.

[16] C. Wülker, S. Heinzer, P. Börnert, S. Renisch, and S. Prevrhal. Fat-constrained 18F-FDG PET reconstruction using Dixon MR imaging and the origin ensemble algorithm. *SPIE 9412, Medical Imaging 2015: Physics of Medical Imaging*, Orlando, FL, USA, 2015.

[17] S. Prevrhal, S. Heinzer, B. Delattre, S. Renisch, C. Wülker, O. Ratib, and P. Börnert. Fat-constrained reconstruction of 18F-FDG accumulation in an integrated PET/MR system using MR Dixon imaging. *Joint Annual Meeting ISMRM-ESMRMB*, Milano, Italy, 2014.

List of theses

[18] C. Wülker. Fast Fourier transforms for spherical Gauss-Laguerre basis functions. Dissertation (in German), Lübeck University, Germany, 2018 (pdf, researchgate).

[19] _____. Time-of-Flight PET image reconstruction using origin ensembles. Master's thesis, Heidelberg University, 2014 (see the corresponding paper).

[20] _____. Collocation methods for partial differential equations based on radial basis functions. Bachelor's thesis, Lübeck University, 2012 (pdf).

List of supervised theses

[21] A. C. L. Kuptz. A matrix factorization of the inverse nonequispaced fast SGL Fourier transform. Bachelor's thesis (in German), officially supervised by Jürgen Prestin, Institute of Mathematics, Lübeck University, 2018.

[22] F. Prüß. An implementation of the fast inverse SGL Fourier transform for scattered data. Bachelor's thesis (in German), officially supervised by Jürgen Prestin, Institute of Mathematics, Lübeck University, 2017.

[23] D.-M. Lux. A parallelization of the fast Fourier transform on SO(3). Bachelor's thesis (in German), officially supervised by Jürgen Prestin, Institute of Mathematics, Lübeck University, 2015.

List of organized workshops

Modeling, Analysis, and Approximation Theory toward Applications in Tomography and Inverse Problems. Summer school within the project "Trilateral Partnerships – Cooperation Projects between Scholars and Scientists from Ukraine, Russia and Germany," organized with Jürgen Prestin, funded by Volkswagen-Stiftung, July 31 – August 04, 2017, Lübeck, Germany (www).