Dr. Thomas Lange

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Research Interests Projects Publications CV

Research Interests

- Spectroscopy with Coupled Resonances
- 2D Spectroscopy Methods
- Lipid Spectroscopy
- Spectral Quantification
- Motion and Distortion Correction

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Projects

- Interleaved Reference Spectroscopy
- Motion Correction for MRS
- Liver Spectroscopy

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Publications

Journal papers

- Lange T, Zaitsev M, Buechert M. Correction of Frequency Drifts Induced by Gradient Heating in 1H Spectra Using Interleaved Reference Spectroscopy. J Magn Reson Imaging 2011; 33:748-754.
- Thomas MA, Lange T, Velan SS, Nagarajan R, Raman S, Gomez A, Margolis D, Swart S, Raylman RR, Schulte RF, Boesiger P. Two-dimensional MR spectroscopy of healthy and cancerous prostates in vivo. MAGMA 2008; 21(6):443-458.
- Lange T, Schulte RF, Boesiger P. Quantitative J-Resolved Prostate Spectroscopy Using Two-Dimensional Prior-Knowledge Fitting. Magn Reson Med 2008; 59(5):966-972.
- Schoonman GG, Sándor PS, Nirkko AC, Lange T, Jaermann T, Dydak U, Kremer C, Ferrari MD, Boesiger P, Baumgartner RW. Hypoxia-induced acute mountain sickness is associated with intracellular cerebral edema: a 3 T magnetic resonance imaging study. J Cereb Blood Flow Metab. 2008; 28(1):198-206.
- Lange T, Trabesinger AH, Schulte RF, Dydak U, Boesiger P. Prostate Spectroscopy at 3 Tesla Using Two-Dimensional S-PRESS. Magn Reson Med 2006; 56(6):1220-1228.
- Lange T, Dydak U, Roberts TPL, Rowley HA, Bieljac M, Boesiger P. Pitfalls in lactate measurements at 3T. AJNR 2006; 27(4):895-901.
- Schulte RF, Lange T, J. Beck, D. Meier, and Boesiger P. Improved two-dimensional J-resolved spectroscopy. NMR Biomed 2006; 19(2):264-270.

- Heggen M, Feuerbacher M, Lange T, Urban K. Microstructural analysis of plastically deformed icosahedral Zn-Mg-Dy single quasicrystals. J ALLOY COMPD 2002; 342(1-2):330-336.

Conference abstracts (as first author)

- Lange T, Maclaren J, Buechert M, Zaitsev M. Spectroscopic Imaging with Prospective Motion Correction and Retrospective Phase Correction. Scientific Meeting and Exhibition ISMRM, Stockholm, Sweden, 2010.
- Lange T, Buechert M, Zaitsev M. Feedback-Based Interleaved Reference Spectroscopy. Scientific Meeting and Exhibition ISMRM, Stockholm, Sweden, 2010.
- Lange T, Zaitsev M, Buechert M. Correction of Frequency Drifts Induced by Gradient Heating in 1H Spectra Using Interleaved Reference Spectroscopy. Scientific Meeting and Exhibition ISMRM, Honolulu, US, 2009.
- Lange T, Schulte RF, Boesiger P. Quantitative J-Resolved Prostate Spectroscopy Using Two-Dimensional Prior-Knowledge Fitting. Scientific Meeting and Exhibition ISMRM/ESMRMB, Berlin, Germany, 2007.
- Lange T, A.H. Trabesinger, Schulte RF, Dydak U, Boesiger P. Two Dimensional S PRESS for Citrate Detection in the Prostate at 3 Tesla. Scientific Meeting and Exhibition ESMRMB, Warsaw, Poland, 2006.
- Lange T, Trabesinger AH, Schulte RF, Dydak U, Boesiger P. Prostate Spectroscopy at 3 Tesla Using Two Dimensional S PRESS. Scientific Meeting and Exhibition ISMRM, Seattle, USA, 2006.
- Lange T, Dydak U, Sándor PS, Boesiger P. Functional Spectroscopic Imaging at 3 Tesla to Assess Lactate Changes in Healthy Brain During Visual Stimulation. EENC/Ampere joint meeting, Lille, France, 2004.
- Lange T, Dydak U, Sándor PS, Boesiger P. Lactate Detection in Healthy Brain During Visual Stimulation Using fMRSI. Scientific Meeting and Exhibition ISMRM, Kyoto, Japan, 2004.
- Lange T, Dydak U, Schulte RF, Trabesinger AH, Boesiger P. Recovering the Lactate Signal at 3T. Scientific Meeting and Exhibition ESMRMB, Rotterdam, NL, 2003.

PhD Thesis

- Thomas Lange Detection of J-Coupled Metabolites in Magnetic Resonance Spectroscopy Institute for Biomedical Engineering, ETH Zürich, 2007

Diploma Thesis

- Thomas Lange Mikrostrukturuntersuchungen an plastisch verformten ikosaedrischen Zn-Mg-Dy-Einquasikristallen Institute for Solid State Physics, Research Centre Jülich, 2001

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CV

since 01/2008	University Hospital Freiburg, Germany Method Development for Magnetic Resonance Spectroscopy
06/2007 - 11/2007	Novartis Pharma AG, Basel, Switzerland Development of MR imaging and spectroscopy techniques investigating biomarkers in animal models of neurodegenerative diseases
12/2001 - 05/2007	Institute for Biomedical Engineering, ETH Zurich, Switzerland PhD thesis: "Detection of J-Coupled Metabolites in Magnetic Resonance Spectroscopy"
03/2000 - 08/2001	Institute for Solid State Physics, Research Centre Jülich, Germany Diploma thesis: "Mikrostrukturuntersuchungen an plastisch verformten ikosaedrischen Zn-Mg-Dy-Einquasikristallen"
10/1997 - 06/1998	Edinburgh University, UK Studies of Physics (exchange year)
10/1995 - 09/2001	RWTH Aachen, Germany Studies of Physics (diploma)

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