



KATHOLISCHE UNIVERSITÄT
EICHSTÄTT-INGOLSTADT

Mathematisches Kolloquium

Structure and Randomness in Mathematical Data Analysis

Prof. Dr. Felix Krahmer

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In this talk, we will discuss random models with varying degrees of imposed structure for different applications in signal processing and data analysis. First, we will discuss a matrix factorization problem as motivated by applications in bioinformatics. To establish uniqueness under a random model, we develop new tools in probabilistic combinatorics. Motivated by applications in wireless communication, we will consider the problem of simultaneous demixing and deconvolution for randomly embedded signals. We improve upon recent results by Ling and Strohmer, establishing for the first time near-optimal parameter dependence. Lastly, we show near-optimal recovery guarantees for analog-to-digital conversion in combination with compressed sensing for structured random measurement systems.

These are joint works with the speaker's PhD students David James, Dominik Stöger, and Joe-Mei Feng as well as with Matthias Hein (Universität des Saarlands), Peter Jung (TU Berlin), and Rayan Saab (UC San Diego).

Mittwoch, 25. April 2018, KG I/Bau A 103, 17.00 Uhr s.t.

Um 16.30 Uhr werden im selben Raum Kaffee und Tee serviert.