

Recent developments in the optimal sampling recovery and discretization problems

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In the talk, we discuss new developments in the power of different types of information (function values vs. linear measurements, deterministic vs. random) as well as different classes of algorithms (linear vs. nonlinear).

The main emphasis will be made on the uniform sampling recovery of bounded complex-valued functions. Besides, we will show how to lift L_2 -error bounds to error bounds in general semi-normed spaces using the spectral function. In what follows, we discuss related problems of the discretization of continuous norms, in particular of the uniform norm, and recent findings on the tight Marcinkiewicz–Zygmund inequalities.

Based on the joint work with Felix Bartel (UNSW Sydney), David Krieg (University of Passau), Martin Schäfer (TU Chemnitz), Mario Ullrich (JKU Linz) and Tino Ullrich (TU Chemnitz).