Lothar-Collatz-Kolloquium für Angewandte Mathematik

Donnerstag, den 7. Mai 2015, um 17:15 Uhr, im Hörsaal 5

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How to sample an operator?

Zusammenfassung/Abstract:

The threat of radio guided Russian missiles and the Berlin Blockade motivated the United States in the late 40s to invest into the design of signals that interfere with wireless communications and of communication systems that are resistant to such jamming signals. In the 50s it became apparent that the performance of the developed jamming resistant spread spectrum communications systems hinges on precise knowledge of the time-varying multi-path communications channel at hand. The necessity of channel identification is the launching point of operator sampling theory.

Following an historical introduction (including non-military applications), recent results on sampling of so-called bandlimited operators are presented. A novel estimator for stationary stochastic operators is derived and a connection to quantum information theory is established.