

Akram Aldroubi

Vanderbilt

Dynamical Sampling and Systems of Iterative Action of Operators

Abstract

We consider frames and Bessel systems generated by iterations of the form $\{A^n g : g \in \mathcal{G}, 0 \leq n, < L(g)\}$, where A is a bounded linear operators on a separable complex Hilbert space \mathcal{H} and \mathcal{G} is a countable set of vectors in \mathcal{H} . The system of iterations mentioned above come from the so called *dynamical sampling problem*. In dynamical sampling, an unknown function f and its future states $A^n f$ are coarsely sampled at each time level n , $0 \leq n < L$, where A is an evolution operator that drives the system. The goal is to recover f from these space-time samples. The dynamical sampling problem has connections and applications to other areas of mathematics including, Banach algebras, C^* -algebras, spectral theory of normal operators, and frame theory.

Talk time: 2016-07-19 3:00PM— 2016-07-19 3:20PM

Talk location: Crow 204

Special Session: Applied harmonic analysis, frame theory, and operator theory. Organized by G. Kutyniok.