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Dynamical sampling: source term recovery and frames

In this talk, I will address the problem of recovering a source terms in a discrete dynamical system represented by $x_{n+1} = Ax_n + w$, where x_n is the n-th state in a Hilbert space $\mathcal{H}$, A is a bounded linear operator in $\mathcal{B}(\mathcal{H})$, and w is a source term within a closed subspace W of $\mathcal{H}$. The focus is on the stable recovery of w using time-space sample measurements formed by inner products with vectors from a Bessel system $\mathcal{G} \subset \mathcal{H}$. These types of results may be relevant to applications such as environmental monitoring, where precise source identification is critical. This work is in collaboration with Rocio Diaz Martin Le Gong, Javad Mashreghi, and Ivan Medri.