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Almost invariant subspaces

A closed subspace of a Banach space \mathcal{X} is almost-invariant for a collection \mathcal{S} of bounded linear operators on \mathcal{X} if for each $T \in \mathcal{S}$ there exists a finite-dimensional subspace \mathcal{F}_T of \mathcal{X} such that $T\mathcal{Y} \subseteq \mathcal{Y} + \mathcal{F}_T$. In this paper, we study the existence of almost-invariant subspaces of infinite dimension and codimension for various classes and sets of Banach and Hilbert space operators.

This is joint work with A. Popov and H. Radjavi.