# Weakly supercyclic and weakly hypercyclic operators

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**Abstract**

A bounded linear operator $T$ acting on a Banach space $\mathcal{B}$ is called *hypercyclic* if there exists $x \in \mathcal{B}$ such that the orbit $\{T^n x : n = 0, 1, \dots\}$ is dense in $\mathcal{B}$ and $T$ is called *supercyclic* if there is $x \in \mathcal{B}$ for which the projective orbit $\{\lambda T^n x : \lambda \in \mathbb{C},\ n = 0, 1, \dots\}$ is dense in $\mathcal{B}$. If the norm density is replaced by the density in the weak topology, the operator is called *weakly hypercyclic* or *weakly supercyclic* respectively.

In this series of talks we prove sufficient conditions for a bounded linear operator to be weakly supercyclic or hypercyclic as well as to be not weakly supercyclic or hypercyclic. We apply these criteria to specific classes of operators including bilateral weighted shifts on $\ell_p(\mathbb{Z})$. Various techniques are applied including probabilistic argument by means of suitably chosen gaussian measures.