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Γ -supercyclicity for c_0 -semigroups

For Γ a subset of \mathbb{C} , a bounded linear operator T on a Banach space X is said to be Γ -supercyclic if there is a vector x in X such that $\text{Orb}(\Gamma x, T) := \{\lambda T^n x : \lambda \in \Gamma, n \in \mathbb{N}\}$ is dense in X . S. Charpentier, R. Ernst and Q. Menet characterized the sets $\Gamma \subset \mathbb{C}$ for which Γ -supercyclicity implies hypercyclicity. They also characterized the set Γ for which, if $\text{Orb}(\Gamma x, T)$ is somewhere dense, then x is a hypercyclic vector for T . In this talk, we will be interested in versions of these results for c_0 -semigroups.