

Distributional chaos for linear operators

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We will present several results on distributional chaos for linear operators on Fréchet spaces. More precisely, we will give a computable condition that characterizes distributional chaos for linear operators. In particular, an operator $T : X \rightarrow X$ on a Banach space X is distributionally chaotic if and only if there are vectors $x \in X$ whose orbit under T behaves extremely irregular, in the sense that there are subsets $A, B \subset \mathbb{N}$ whose upper density equals 1 such that, $\lim_{n \rightarrow \infty, n \in A} \|T^n x\| = 0$ and $\lim_{n \rightarrow \infty, n \in B} \|T^n x\| = \infty$.