



SEMINÁRIO

SISTEMAS DINÂMICOS

27 de novembro 2023 | 11:00 | sala 6.2.33

Stable laws for random dynamical systems

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ABSTRACT:

We consider limit theorems for random dynamical systems and unbounded observables of the form $\phi(x) = d(x, x_0)^{-1/\alpha}$, $\alpha \in (0, 2)$. We obtain both annealed and quenched convergence of scaled Birkhoff sums to a stable law, as well as the convergence in the Skorohod metric of the corresponding functional processes towards a Lévy α -stable process. A crucial aspect of this result lies in the fact that, unlike for the quenched central limit theorem, the centering constants are the same for almost every realizations. Applications include i.i.d. compositions of maps chosen from some classes of random uniformly one-dimensional expanding maps or random intermittent maps. This is a joint work with Matthew Nicol and Andrew Török.