

# Limit theorems for elephant random walk

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## Resumo/Abstract:

We present the so-called elephant random walk (ERW), a discrete time random walk on  $\mathbf{Z}$  with unbounded memory which exhibits a phase transition on the parameter  $p \in (0, 1)$ . If  $p < 3/4$ , the walk presents diffusive behaviour; if  $p > 3/4$  it shows a superdiffusive behaviour. We prove limit theorems for the ERW such as the law of large numbers for all  $p \in (0, 1)$ , the central limit theorem for the diffusive regime and the convergence of the walk to a non-normal random variable in the superdiffusive regime.