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OCCUPATION TIME FLUCTUATIONS OF POISSON AND EQUILIBRIUM FINITE VARIANCE BRANCHING SYSTEMS

Piotr Miłoś

Abstract: Functional limit theorems are presented for the rescaled occupation time fluctuation process of a critical finite variance branching particle system in $\mathbb{R}^d$ with symmetric α-stable motion starting off from either a standard Poisson random field or from the equilibrium distribution for intermediate dimensions $\alpha < d < 2\alpha$. The limit processes are determined by sub-fractional and fractional Brownian motions, respectively.

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