

DISCONTINUOUS SUPERPROCESSES WITH DEPENDENT SPATIAL MOTION

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Abstract: We construct a class of discontinuous superprocesses with dependent spatial motion and general branching mechanism. The process arises as the weak limit of critical interacting-branching particle systems where the spatial motions of the particles are not independent. This work generalizes the model introduced in [D.A. Dawson, Z. Li, H. Wang, Superprocesses with dependent spatial motion and general branching densities, *Electron. J. Probab.* 6(2001), no.25, 33 pp. (electronic)] where quadratic branching mechanism was considered.