

1090-60-175

Iddo Ben-Ari* (iddo.ben-ari@uconn.edu), Department of Mathematics, 196 Auditorium Rd, Storrs, CT 06269-3009. *Diffusion with Redistribution*.

We consider a diffusion process on a bounded domain with random redistribution. The redistribution is obtained through either one of the following mechanisms. The first is redistribution when the diffusion hits the boundary, and this is repeated indefinitely. The second is “instantaneous” redistribution, occurring at jump times of some time-changed Poisson process, and the diffusion is killed upon hitting the boundary. By “redistribution” we mean starting the diffusion afresh from some prescribed probability distribution on the domain, which may depend on its location immediately prior to the time the redistribution occurred. For the first, we will focus on ergodicity, spectral gap and coupling. For the second, we will discuss the interplay between the “fast”, continuous diffusion and the “slow”, non-local redistribution process in a “non-elliptic” setting, as it appears through asymptotic behavior of the exit distribution from the domain. (Received February 28, 2013)