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Title: Stochastic Resetting

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The Fokker-Planck Equation

Markov Process
Feynman Kac Formalism
Diffusion with stochastic resetting

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Abstract:

We first develop the understanding of Langevin and Fokker Planck formalisms, path integral formalism and renewal theory. We then shift our focus to the main aim of the project that is to understand the stochastic resetting which can be defined as the abrupt restart of the stochastic process where the time of the next restart follows some waiting time distribution. We start with Diffusion with Stochastic Resetting as a first model of study and extend the results of the paper to the general case of initial position not being same as resetting position then to explore the possibility of finding new result we look at several models one after another namely Ornstein Uhlenbeck process with resetting, space dependent resetting, time dependent resetting. At last we tried to look at: (a) Affect of multiple resetting sites on diffusion with Poissonian resetting and try to understand the changes in the dynamics with respect to the set of resetting points and (b) Random graph evolution with resetting as an example of search algorithm with resetting.

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