Continuous Time Random Walk

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August 24, 2018

Abstract

We want to investigate how the CTRW works as a model for relaxation in non-linear systems.

1 Introduction

Transport is an ubuquitous non-equilibrium phenomena that occurs in different scenarios. Diffusion is one type of transport that is signalized by a mean square displacement

$$\langle \Delta r^2 \rangle \sim t^{\alpha} \tag{1}$$

where, $\alpha = 1$ for normal diffusion, $\alpha < 1$ for subdiffusive and $1 < \alpha < 2$ for a superdiffusive and ballistic for $\alpha = 2$. Therefore a general description to get the different types of diffusion is by using a Continuous time random walk.

- What is the generating equation for a CTRW.
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2 Methods

In order to make simulations