University of Potsdam Institute of Physics and Astronomy
Lecture Stochastic Processes (SS 2018)
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Problem Set 8

(discussion on June 28th)

1. CTRW forward waiting time distribution

A continuous time random walker with a waiting time distribution $\psi(t)$ is observed at an ageing time t_a after an initial preparation. Find the Laplace transform $\psi_i(s, u)$ of the forward waiting time distribution $\psi_i(t, t_a)$, i.e. the probability density function for the waiting time t until the first observed jump.

2. The Langevin equation

Calculate the velocity spectral density of a particle performing Brownian diffusion.