Stochastic Calculus

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1 Introduction

Let us start off with an ordinary differential equation

$$\frac{dN(t)}{dt} = \alpha(t)\, N(t)$$

where. Given an equation

$$\frac{N(t+\Delta t) - N(t)}{\Delta t} = \alpha(t)N(t) + \epsilon \tag{1}$$

where ϵ is some random variable representing noise.

2 Stuff