Fokker-Planck equation: Numerical solutions and integration

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1 Introduction

The Fokker-Planck equation is a tremendously important relation in the study of all types of stochastic systems. Starting from the most basic 'continuity equation' of stochastic processes—the Chapman-Kolmogorov equation—one can show that, under a set of reasonable assumptions on the continuity and smoothness of the process itself, the governing dynamics at the level of a probability distribution is the Fokker-Planck equation. Put simply, the Fokker-Planck equation takes the form of a 2nd order parabolic partial differential equation, describing the time-dependent evolution of a probability distribution (among other things).

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