

Data Analysis of Time Series: A Case Study

Paul Tupper
Dept. of Mathematics and Statistics
McGill University
Burnside Hall, 805 Sherbrooke St. West
Montréal, Québec H3A 2K6
Canada

Abstract

I will present a case study of the analysis of some data from an experimental study. The study, performed by Alex Sheftel of McGill Physiology, took videomicrograph movies of organelles moving stochastically in a cell. The physiologists were interested in what could be determined about the behaviour of the organelles from analysis of the movies. I will go step-by-step through a simple analysis of time-series taken from the movies and explain what it suggests about the organelles. I will tie the analysis in with the theory of stochastic differential equations.