

Stochastic Chemical Kinetics in Biology: An Overview

Péter Érdi^{1,2}

¹ Center for Complex Systems, Kalamazoo College, Kalamazoo, MI 49006,
USA

perdi@kzoo.edu

² Wigner Research Centre for Physics, Hung. Acad. Sci. Budapest,
Hungary

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The lecture reviews the theory and simulation methods of stochastic kinetics by integrating historical and recent perspectives, presents applications, mostly in the context of chemical signal processing, gene expression, enzyme kinetics and autocatalytic processes. In recent years, due to the development in experimental techniques such as optical imaging, single cell analysis, and one-molecule fluorescence spectroscopy, biochemical kinetic data inside single living cells have increasingly become available. The emergence of systems biology brought renaissance in the application of stochastic kinetic methods as is reflected in this lecture based on the book just to appear around the week of the BIOMATH2014 [1].

References

- [1] P. Érdi, G. Lente, Stochastic Chemical Kinetics: Theory and (Mostly) Systems Biological Applications. Springer, 2014.