

analysis of biological systems

ANALYSIS OF BIOLOGICAL SYSTEMS

Modeling is fast becoming fundamental to understanding the processes that define biological systems. High-throughput technologies are producing increasing quantities of data that require an ever-expanding toolset for their effective analysis and interpretation. Analysis of high-throughput data in the context of a molecular interaction network is particularly informative as it has the potential to reveal the most relevant network modules with respect to a phenotype or biological process of interest.

Analysis of Biological Systems collects classical material on analysis, modeling and simulation, thereby acting as a unique point of reference. The joint application of statistical techniques to extract knowledge from big data and map it into mechanistic models is a current challenge of the field, and the reader will learn how to build and use models even if they have no computing or math background. An in-depth analysis of the currently available technologies, and a comparison between them, is also included. Unlike other reference books, this in-depth analysis is extended even to the field of language-based modeling. The overall result is an indispensable, self-contained and systematic approach to a rapidly expanding field of science.

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