

Modeling is now one of the most efficient methodologies in life sciences. From practice to theory, this book develops this approach illustrated by many examples; general concepts and the current state of the art are also presented and discussed.

An historical and general introduction informs the reader how mathematics and formal tools are used to solve biological problems at all levels of the organization of life. The core of this book explains how this is done, based on practical examples coming, for the most part, from the author's personal experience. In most cases, data are included so that the reader can follow the reasoning process and even reproduce calculus. The final chapter is devoted to essential concepts and current developments. The main mathematical tools are presented in an appendix to the book and are written in an adapted language readable by scientists, professionals or students, with a basic knowledge of mathematics.

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