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BOOK REVIEW

## Modeling Complex Systems

N Boccara

Heidelberg: Springer-Verlag (2004)

397pp EUR79.95, £61.50, US\$79.95 (hardback) ISBN 0-387-40462-7

This book by Nino Boccara presents a compilation of model systems commonly termed as 'complex'. It starts with a definition of the systems under consideration and how to build up a model to describe the complex dynamics. The subsequent chapters are devoted to various categories of mean-field type models (differential and recurrence equations, chaos) and of agent-based models (cellular automata, networks and power-law distributions). Each chapter is supplemented by a number of exercises and their solutions.

The table of contents looks a little arbitrary but the author took the most prominent model systems investigated over the years (and up until now there has been no unified theory covering the various aspects of complex dynamics). The model systems are explained by looking at a number of applications in various fields.

The book is written as a textbook for interested students as well as serving as a comprehensive reference for experts. It is an ideal source for topics to be presented in a lecture on dynamics of complex systems. This is the first book on this 'wide' topic and I have long awaited such a book (in fact I planned to write it myself but this is much better than I could ever have written it!). Only section 6 on cellular automata is a little too limited to the author's point of view and one would have expected more about the famous Domany--Kinzel model (and more accurate citation!).

In my opinion this is one of the best textbooks published during the last decade and even experts can learn a lot from it. Hopefully there will be an actualization after, say, five years since this field is growing so quickly.

The price is too high for students but this, unfortunately, is the normal case today. Nevertheless I think it will be a great success!

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