
The Synergetics series, under the overall editorship of H. Haken, has provided an excellent forum for stochastic phenomena, chaos, nonlinear dynamics and complex behaviour. Conference proceedings in fields like these, which are currently fashionable, and therefore tend to evolve rapidly, are by their very nature, outdated by the time of printing, and of historical interest three years later. This book, the twenty-first in the Synergetics series, a collection of papers from a meeting on Systems Analysis, has marginal utility at this point in time.

The editor of this book, Peter Schuster, has had a difficult task in presenting the various contributions under this title. Less than half the book actually deals with chaos as is commonly understood, while the rest of it is devoted to systems analysis.

An interesting pedagogical study on the double-pendulum is made by Richter and Scholz; examples of this kind are very suitable for introducing the subject of nonintegrable dynamics in conservative systems. Experimental studies of chaos are confined to two examples from chemical kinetics; Hudson, Mankin and Roessler review studies of the Brousov-Zhabotinsky reaction, while Olsen analyzes the chaotic motion in the oscillating oxidase-peroxidase reaction. In this context, Noyes, who has pioneered the mechanistic study of oscillating chemical reactions, points out the dangers of applying the mathematical theory of chaos to experiments. This point is worth amplifying. It is well-known that very simple nonlinear equations are (mathematically) able to produce very complicated dynamics; it is also possible to write a simple kinetic scheme to produce such nonlinear equations, as for example the “Brusselator” of Prigogine and coworkers. This emphasis on the simple can be misleading (although it is attractive); in particular, Noyes suggests that it is difficult to rule out (complicated) experimental fluctuations as the source of the “chaos” that is experimentally observed.

The remainder of the book deals with complex systems and the complicated behaviour that is possible in nonlinear systems analysis. Examples range from biochemistry and ecology to urban development and economics. It is not clear that the concepts and techniques developed in the study of chaotic systems can easily be applied to these more complex systems; this portion of the book is merely a collection of papers on diverse subjects.

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ANNOUNCEMENT

ADVANCED WORKSHOP ON FAULT-TOLERANT COMPUTING

This workshop to be held at Bangalore, July 20–25, 1987, aims at providing vast exposure to recent developments in the area of fault-tolerant computing (FTC), with emphasis on real-time applications. It consists of a series of invited lectures by researchers from abroad and India, providing an in-depth coverage of various aspects of FTC.

This workshop assumes a greater significance as there is a growing need for ultra high reliability and uninterrupted operation of computer systems in a variety of applications. Last date for registration is June 1, 1987.

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