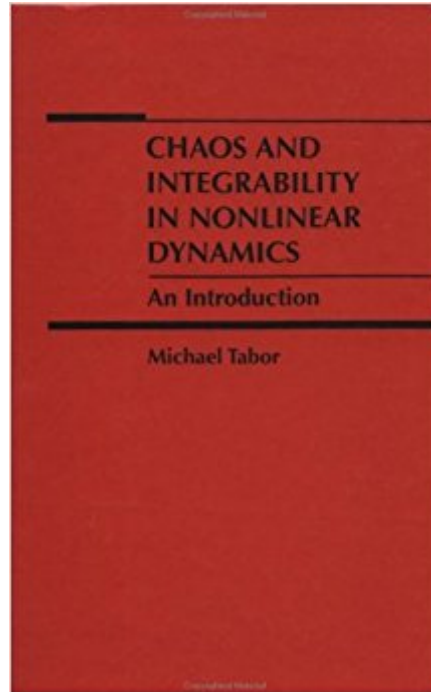# Chaos And Integrability In Nonlinear Dynamics: An Introduction

Synopsis

Presents the newer field of chaos in nonlinear dynamics as a natural extension of classical mechanics as treated by differential equations. Employs Hamiltonian systems as the link between classical and nonlinear dynamics, emphasizing the concept of integrability. Also discusses nonintegrable dynamics, the fundamental KAM theorem, integrable partial differential equations, and soliton dynamics.

Book Information

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Customer Reviews

The book provides a bridge from undergraduate and classical math and physics courses to more recent research at a beginning graduate school level. It provides a good picture of the meaning of these fundamental recent discoveries. The book contains several diagrams. I especially like Tabor's intuitive description of the Kolmogorov-Arnorld-Moser (KAM) theorem. The book was published in 1989 but I think this covers the most recent knowledge, although I read math for pleasure so I don't keep up on all research. At the heart of this is some serious and difficult questions about the stability and precision of solutions to the famous n-body problem, which includes our planetary system. Those questions stretch back to Weierstrass and have perplexed mankind where these are the deepest answers so far.

The CONTENT of this book is very good for an introductory level text, and is covered somewhat adequately. However, the book is horribly written, edited, and organized, making it ultimately more frustrating and worthless than useful. The reader who pays even the slightest bit of attention will

notice, on average, a very glaring typo on just about every single page (perhaps a slight exaggeration). Some pages have none, some pages have 3 or 4 obvious ones. Not always just little mistakes, either - sometimes very, very serious mistakes that one wonders how anyone could have possibly typed. For someone not already familiar with the material, these blatant, and often times just plain stupid errors detract from any educational value that can be hoped for. As a college/graduate level textbook it also fails. It has no problems and no examples to illustrate any of the concepts beyond the mere fundamental aspects or statements.How this book was released with such a poor editing job is beyond me. Any student who might make the amount of errors in a class that are contained in this book would surely fail. Find a better book and buy that one. Unfortunately I can't recommend a better one, I can only honestly comment on how poorly done this one is.Note: If later volumes are ever released (and perhaps they have been; this is a review of the first volume)then I hope that the errors have been fixed, and perhaps some examples and problems added. If this is done, then this could become a very GOOD book.

This is a very good book. Has a lot of relevant stuffs covered and it's at least light years ahead of similar books in terms of digestibility. Tightly-written yet not patronisingly simple. Check it out.

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