



# An Exploration Of Dynamical Systems And Chaos

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**Summary :** Free an exploration of dynamical systems and chaos pdf download - this book is conceived as a comprehensive and detailed text-book on non-linear dynamical systems with particular emphasis on the exploration of chaotic phenomena the self-contained introductory presentation is addressed both to those who wish to study the physics of chaotic systems and non-linear dynamics intensively as well as those who are curious to learn more about the fascinating world of chaotic phenomena basic concepts like poincar section iterated mappings hamiltonian chaos and kam theory strange attractors fractal dimensions lyapunov exponents bifurcation theory self-similarity and renormalisation and transitions to chaos are thoroughly explained to facilitate comprehension mathematical concepts and tools are introduced in short sub-sections the text is supported by numerous computer experiments and a multitude of graphical illustrations and colour plates emphasising the geometrical and topological characteristics of the underlying dynamics this volume is a completely revised and enlarged second edition which comprises recently obtained research results of topical interest and has been extended to include a new section on the basic concepts of probability theory a completely new chapter on fully developed turbulence presents the successes of chaos theory its limitations as well as future trends in the development of complex spatio-temporal structures this book will be of valuable help for my lectures hermann haken stuttgart this text-book should not be missing in any introductory lecture on non-linear systems and deterministic chaos wolfgang kinzel w rzburg this well written book represents a comprehensive treatise on dynamical systems it may serve as reference book for the whole field of nonlinear and chaotic systems and reports in a unique way on scientific developments of recent decades as well as important applications joachim peinke institute of physics carl-von-ossietzky university oldenburg germany

**Pusblisher :** Springer on 2015-04-24 / **ISBN :** 9783662460429

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