

Baker, Gregory L.; Gollub, Jerry P.

Chaotic dynamics. An introduction. 2nd enlarged and rev. ed. (English) Zbl 0887.58035
Cambridge: Cambridge University Press. xiv, 256 p. (1996).

As in the first edition (see [Zbl 0712.58001](#)), the authors present all the main features of chaotic dynamics using the damped, driven pendulum as the primary model. A special feature is the inclusion of both analytic and computer exercises with which the reader may expand upon the many numerical simulations included in the book.

This new edition includes additional material on the analysis and characterization of chaotic data, and applications of chaos. Experimental data from a chaotic pendulum are analyzed using methods of non-linear time series analysis. With the help of new computer programs provided in the book, readers and students can learn about these methods and use them to characterize their own data. The present edition also explains methods for short-term prediction and control. Spatio-temporal chaos is now introduced with examples from fluid dynamics, crystal growth, and other areas. The number of references is more than doubled. The solutions are included to selected exercises.

Reviewer: [N.Papaghiuc \(Iași\)](#)

MSC:

- [37D45](#) Strange attractors, chaotic dynamics of systems with hyperbolic behavior Cited in **25** Documents
- [37-01](#) Introductory exposition (textbooks, tutorial papers, etc.) pertaining to dynamical systems and ergodic theory
- [37N99](#) Applications of dynamical systems

Keywords:

[fractal dimension](#); [nonlinear dynamics](#); [attractors](#); [fractals](#); [chaotic attractors](#); [chaotic dynamics](#)