

Book Review: *Chaos and Fractals*

Chaos and Fractals: New Frontiers of Science. H. O. Peitgen, H. Jurgens, and D. Saupe, Springer-Verlag, New York, 1992.

This work is an encyclopedic compendium of details and ideas about topics in both the theory and applications of fractals, chaos, and related topics such as percolation and cellular automata. This collation is an impressive achievement and it is certainly recommended for the bookshelf of every contemporary scientist, mathematician, or curious individual. The quality of presentation is pleasant, with lovely color pictures and clear typesetting.

On those topics where I am familiar with the research literature I was impressed by the selection of material and references. On topics where I was less familiar I felt able to obtain some intuition and understanding from the material presented. The bibliography is impressive, as is the sheer detail of every topic. I think that "encyclopedia" is an excellent description of the scope of this book.

I also enjoyed very much the two appendices, one on "A discussion of fractal image compression" by Yuval Fisher and the second by Carl Evertz and Benoit Mandelbrot on "Multifractal measures."

I was a little disappointed by the selection of Basic as the computer language for the programs; it seems to me that the intellectual level of the book is such that at least an appendix of programs (or explicit mention in the bibliography of alternate books that provide good programs) in a more versatile language, such as Fortran, C, Pascal, or Tru-Basic, would be desirable. However, given the choice of Basic as the language, the programs are well presented and clearly explained, and other sources of programs for fractals and chaos are available.

In conclusion, I cannot think of another source that provides such a complete coverage of so many topics in this area and strongly recommend this book. My copy is borrowed almost as often as the TeX manual or Mathematica handbook.

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