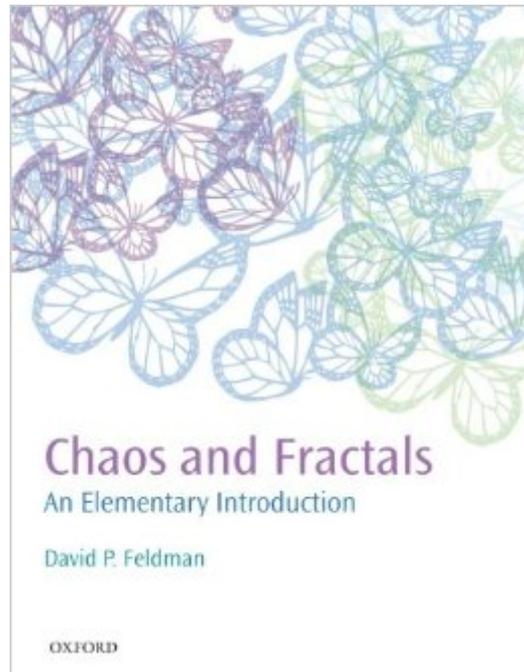


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Chaos And Fractals: An Elementary Introduction



Synopsis

This book provides the reader with an elementary introduction to chaos and fractals, suitable for students with a background in elementary algebra, without assuming prior coursework in calculus or physics. It introduces the key phenomena of chaos - aperiodicity, sensitive dependence on initial conditions, bifurcations - via simple iterated functions. Fractals are introduced as self-similar geometric objects and analyzed with the self-similarity and box-counting dimensions. After a brief discussion of power laws, subsequent chapters explore Julia Sets and the Mandelbrot Set. The last part of the book examines two-dimensional dynamical systems, strange attractors, cellular automata, and chaotic differential equations. The book is richly illustrated and includes over 200 end-of-chapter exercises. A flexible format and a clear and succinct writing style make it a good choice for introductory courses in chaos and fractals. To request a copy of the Solutions Manual, visit: <http://global.oup.com/uk/academic/physics/admin/solutions>

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Customer Reviews

I've read a bunch of Chaos and Fractals books, and this one is really the basic place to start Chaos and Fractals math. And now with Prof Feldman's online course (Complexity Explorer website) there's really no excuse to learn the subject anymore :). Very well done Prof. Feldman!. This is a great book and I really felt envy of Prof Feldman Students. Other book I really liked is Flake's Computational Beauty of Nature which you can read in parallel or after this one.

So I was fortunate enough to take David Feldman's MOOC through the Santa Fe Institute on

dynamical systems. He was just amazing in the course, one of the most likeable teachers I have ever had. Dynamical systems (chaos and fractals are part of that, sort of, kind of), are not trivial to understand. Yet Dr. Feldman is such a master teacher that he makes it look easy and interesting, very interesting. The good news is that he writes like he teaches. This book gets into far more detail than the more popular titles by Gleik and others. It is not a tome like the ones targeted at math geniuses either. It is right in the middle, not too much, not too little, but just right. The middle bear of chaos. Feldman is as patient a writer as he is a teacher and will repeat himself in a masterful way to ensure you get the concept. His writing is approachable, just like he is. He is wicked smart, but does not need to rub it in your face. And he does not. The book is broad in its aim to give you a complete overview of chaos and fractals (dynamical systems) along with the math, but in a way that anyone can get it. This is a must have. His MOOC is a must take and he is a gift to the world of students. He is that rare teacher you never forget and always appreciate and his book is the same.

I have read many books on the subject. This one is the best. The author goes out of his way to explain things clearly. No matter how complex the topic, he does a great job explaining it with both words and graphics.

I can't believe how well written this book is. There are paragraphs here I reread just for the sheer pleasure of the language. I have never read another math book where such care was taken with the writing. If you want to know about Chaos and Fractals and you are an adult start here.

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