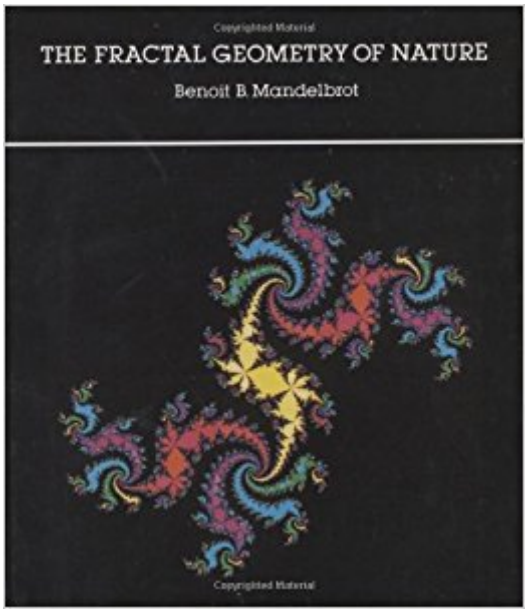
The Fractal Geometry Of Nature



Synopsis

Clouds are not spheres, mountains are not cones, and lightening does not travel in a straight line. The complexity of nature’s shapes differs in kind, not merely degree, from that of the shapes of ordinary geometry, the geometry of fractal shapes. Now that the field has expanded greatly with many active researchers, Mandelbrot presents the definitive overview of the origins of his ideas and their new applications. The Fractal Geometry of Nature is based on his highly acclaimed earlier work, but has much broader and deeper coverage and more extensive illustrations.

Book Information

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Customer Reviews

Very few books have so many quotes as this one. I am not sure if there is much left to be said, but I know this. For those professionals who still think that fractals are "spurious solutions coming from the discretization of differential equations", should take a closer look to this book. Not only won’t harm, but also will show many interesting features about the nature of fractals and the "fractality" of nature, besides the fact that many of them come from *difference* equations, which are not necessarily related to the discretization of a differential equation. This book is based on serious work from many well-reputed mathematicians before Mandelbrot, e.g., Haussdorff, Lyapunov and some others. Although the book does talk about the mathematics behind fractals (wouldn’t be so much a book of mathematics if it didn’t, but also a philosophical one) and the necessity of coining some new mathematical terms, it also contains so much about history of mathematics, the path that leads towards fractals. As I said, the book is many times quoted, but (without trying to point a firing, accusing finger), there is a difference in quoting a book because it is famous, and another actually

reading it, and having enlightenment for our own sake. Certainly I think is a "must-have-it" for most mathematicians, for many physicists, philosophers of science and engineers, but also it wouldn't be a bad guest in the library of any layman, provided the layman overcomes for some minutes the initial "classical" fear to mathematics. I would say this layman won't regret it at all. Mandelbrot does explain most of the concepts practically "ab initio", from the very scratch, including etymology and history as I previously said. One little thing against this book though: it doesn't have so many color plates as some other books on the subject, but it does have all the needed graphics to grasp the concepts.

Mandelbrot is the person who introduced the fractal theory to the world in its present form. Many fields of science including geophysics have gained from fractals. However, this is not the book one should read to gain knowledge on the subject.It is not an easily readable book. 1. It is not well-organized 2. It does not cover necessary things in detail 3. Frustratingly long in some parts. Instead the books: Feder, Fractals; Turcotte, Fractals and Chaos in Geology and Geophysics can be recommended.Fractal geometry may be interesting as a historical book, after one gains a sufficient knowledge on fractals.

Mandelbrot's update of his classic work is certainly eye-catching. However, just like its forerunner, it fails to answer the simplest questions, including, "How do I calculate the fractal dimension of this curve?" and "How can I manage to plot the Julia set for myself?" The answers to such questions have to be gleaned by the intelligent--and mathematically sophisticated--reader for himself. (One sees this phenomenon all the time in "advanced" mathematics books. It means that either [a] the author has his head stuck in the clouds and expects the reader to use divination, or [b] he prefers to keep his readers ignorant.) For a much more practical and rewarding discussion, read "The Science of Fractal Images" edited by Peitgen and Saupe. The math is clear; the algorithms are plainly stated for the PC enthusiast with some simple programming skills; and the color plates are astounding.

This tome is the immortal classic that introduces fractals to the layman and scholar alike. The mechanics and beauty of fractals are presented in a very readable manner that is sure to pique the interest of anyone seeking a deterministic, yet almost supernaturally pervasive paradigm of the structure of the universe. This book fundamentally affected my personal outlook on nature irrecovably. I would advise leaving it on the coffee table for your children to examine.

This was the book that first caught my attention. It was the cover diagram: a figure the like of which I had never seen. One thing led to another until I finally wrote my own application of fractals, Fractals in Music.Mandelbrot is an odd character, but a superb thinker. His book does not offer a lot of science, but rather a compelling view of how this fascinating and growing topic developed. I recommend it highly.

This book is the latest version of a book the famous Benoit Mandelbrot wrote back in the mid-1970s, in which he coined the term "fractal". The subsequent version was released around 1980 and had, among other pictures, a black blotchy image on a white background which he called "the Ã Â -map". Then some joker started calling it "The Mandelbrot Set" and he had to change the book again.It is true that this is not the best-written book on fractal geometry. However, for a time it was the ONLY book on fractal geometry, and as such has incredible historic value. Imagine in ancient Greece where people had to borrow one of Euclid's latest scrolls to read about things found in no other work.Personally, this book has taught me only a few things. I had already learned about fractals from articles in 1980s issues of Scientific American, and computer programs in Compute! magazine.Many black-and-white images suffuse this tome, though there are some color plates which are by no means as complex as today's fractallographies, but will serve as an introduction to the genre.The only Mandelbrot Set image is the blotchy one mentioned earlier. That's because Dr. Mandelbrot, though he discovered the set, wasn't the first to color the complement, and it was Heinz-Otto Peitgen's 1984 book "The Beauty of Fractals" that has the first color Mandelbrot pictures.I wholeheartedly recommend this book for a glimpse into history, and the uninitiated may learn something as well; though I wouldn't demand that much of it.

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