

SuperFractals by Michael Fielding Barnsley

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http://www.amazon.com/SuperFractals-Michael-Fielding-Barnsley/dp/0521844932/ref%20pd_bbs_sr_1/104-002961
(Hardcover)

by Michael Fielding Barnsley (Author) "Any picture may be conceived as a mathematical object, lying on part of the euclidean plane, each point having its own colour..." (more)

Key Phrases: John Hutchinson, Lake Padden

Amazon.com

Book Description

Superfractals is the long-awaited successor to Fractals Everywhere, in which the power and beauty of Iterated Function Systems were introduced and applied to producing startling and original images that reflect complex structures found for example in nature. This provoked the question of whether there is a deeper connection between topology, geometry, IFS and codes on the one hand and biology, DNA and protein development on the other. Now, 20 years later, Barnsley brings the story up to date by explaining how IFS have developed in order to address this issue. New ideas such as fractal tops and superIFS are introduced, and the classical deterministic approach is combined with probabilistic ideas to produce new mathematics and algorithms that open a whole theory that could have applications in computer graphics, bioinformatics, economics, signal processing and beyond. For the first time these ideas are explained in book form, and illustrated with breathtaking pictures.

Click to see larger images from SuperFractals

(Links will open in a new browser window)

Review

"Overall, SuperFractals would be a superb addition to the bookshelves of any scientists who use fractal analysis techniques in their research, be they physicist, biologist or economist. The author concludes by promising that the introduction of superfractals will revolutionize the way mathematics, physics, biology and art are combined, to produce a unified description of the complex world in which we live. After reading this book I have no doubt he is correct."

Nature

"The book is well structured and an enjoyable read...The book contains some interesting, very deep and even enthralling mathematics. The author's ability to clearly describe complicated phenomena paired with a pleasant writing style make this book a must read for all people interested in the mathematics of fractals...There are many wonderful, colorful pictures that spark one's imagination. Examples spread liberally throughout the book together with relevant exercises help illuminate this new look at 'patterns in nature'."

MAA Reviews

customer reviews:

SuperFractals by Michael Fielding Barnsley

Not a Good Experience this time, May 11, 2007

By Lalit Kr Gupta (Delhi, India) – See all my reviews

(REAL NAME) The order reached me after so many calls. The actual order did not reach me and Amazon reordered that for me and even charge me for that which they refund me later on but for that I have to call international number many times which cost me a lot. I must say not a good experience this time. Hoping a better one next time.

Opinion on SuperFractals, April 2, 2007

By Ronald S. Shortt (Riverside, CA USA) – See all my reviews

(REAL NAME) This is the best book I have seen on fractals. It gives a deep, sweeping mathematical account of the amazing properties of fractal images that are not presented in other books I have read on the subject. I was astounded at the content of this book, it was far more than what I had expected!

A Beautiful Book, January 31, 2007

By DataGuru (DC) – See all my reviews

Prof. Michael Barnsley has demonstrated once again that his approach to pattern analysis in the real-world, namely self-similar patterns, through iterated functions and random dynamical systems, works for more complex and amazingly complex and beautiful patterns, by expanding his previous theory developed in his earlier book. Besides the nice mathematics and recent theoretical developments by him and others, the many beautifully produced figures in the book are already worthy the price of the book, which I am surprised is such a bargain.