



DEPARTMENT OF MATHEMATICS
KUTZTOWN UNIVERSITY OF PENNSYLVANIA

COLLOQUIUM

3:30 P.M.

THURSDAY, FEBRUARY 17, 2011

BOEHM HALL 260

An Introduction to Fractals

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ABSTRACT

The concept of fractional dimension has been around for well over a century, but the term "fractal" itself and the interest in them, both popular and scientific, date from the proliferation of microcomputers in the early 1980s. For example, using the self-similarity feature of fractals allows for efficient data compression in such computer applications as Microsoft's Encarta encyclopedia and in video games. As a result of all this interest, fractals have begun appearing in junior and high school textbooks as a way of demonstrating to today's younger students that mathematics is indeed a very active and dynamic field of study, one for which all the answers are not known, indeed one for which all the questions have not even been asked.

The term "fractal" itself is a relatively recent one (coined by the late Benoit Mandelbrot in 1975), but the study of fractals goes much further back in time. Mathematicians including Karl Weierstrass, Georg Cantor, Felix Hausdorff, David Hilbert, and Giuseppe Peano, among others, studied the concepts-and incongruities-associated with fractals.

This presentation will serve as an introduction to the fascinating world of fractals, in particular iterated function systems, mostly from a geometric viewpoint. Attendees will have the opportunity to construct for themselves-without the aid of a computer-some classic examples of fractals, and we will discover just what makes them so gosh darn interesting!

3:00 p.m.
refreshments served

3:30 p.m.
talk begins