Special Seminar

The Fractal Geometry of Roughness

Benoit Mandelbrot,
Sterling Professor of Mathematical
Sciences at Yale University

Pacific Northwest National
Laboratory
Battelle Auditorium
902 Battelle Blvd
Richland, Washington

Thursday, April 14, 2005
9:00 to 10:00 a.m.

Professor Benoit Mandelbrot coined the term "fractal" in 1975 and is known as the "father of fractal geometry." He created a fractal that is named after him—the Mandelbrot Set. Professor Mandelbrot has written extensively about how fractals can occur in both mathematics and nature. Fractals are unique computer-generated graphical art forms created using mathematical formulas that can also serve as tools to model and measure irregular patterns and structures that cannot be represented by classical geometry—like the rough edges of a coastline.

For centuries, scientists have observed and bemoaned their inability to understand true roughness. They were constrained to phenomena in which randomness is either absent or averages out. Professor Mandelbrot will introduce the open frontier along which he has been laboring for over fifty years—that of true roughness, in which power-law tails and power-law dependence affect or prevent averaging. It occurs in both quantitative sciences and engineering, and in Man's works (culture), from financial markets to "pure" mathematics, and to art.

For more information about Professor Mandelbrot, visit http:www.math.yale.edu/Mandelbrot
Contact Karen Matz for details about the seminar: 509-372-4029 and Karen.matz@pnl.gov
The seminar will be available "live" by streaming video on the web at: http://www.pnl.gov/cse/mandelbrot