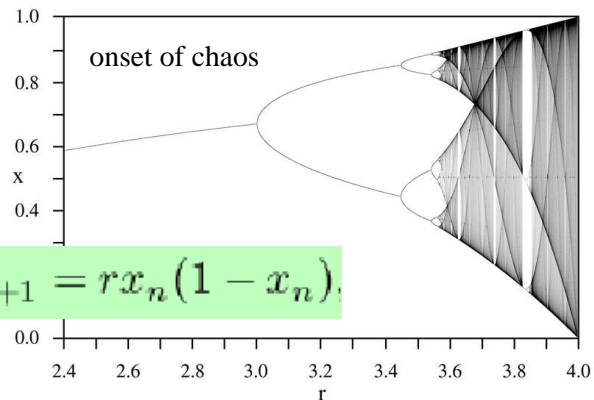
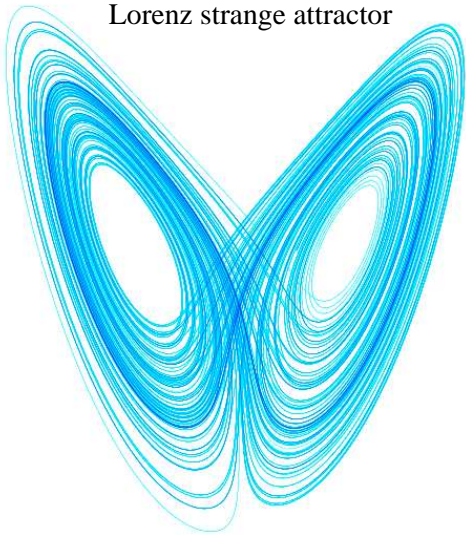


MATH 53:

Chaos!

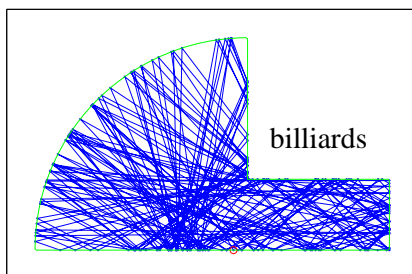
Lorenz strange attractor



Nowhere on campus is there a course on chaotic dynamical systems... until now!

Chaos and fractals are universal in the sciences, mathematics, finance, ...

Come and find out how the universe really works...



ORC Description: Chaotic dynamical systems are everywhere: weather patterns, swinging pendula, population dynamics, even human heart rhythms. With a balance of theory and applications, this course will introduce: flows, fixed points, bifurcations, Lorenz equations, Lyapunov exponent, one-dimensional maps, period-doubling, Julia sets, fractal dimension. Optional topics may include: Hamiltonian systems, symbolic dynamics. Numerical explorations will involve a package like MATLAB/Octave, and students will present a final project investigating a related topic.

Prerequisite: Mathematics 22 and 23, or permission of the instructor.

a new course

* the only course in the ORC with an exclamation point in the name

fall 2007 professor barnett MWF 1:45 pm

<http://math.dartmouth.edu/~m53f07>