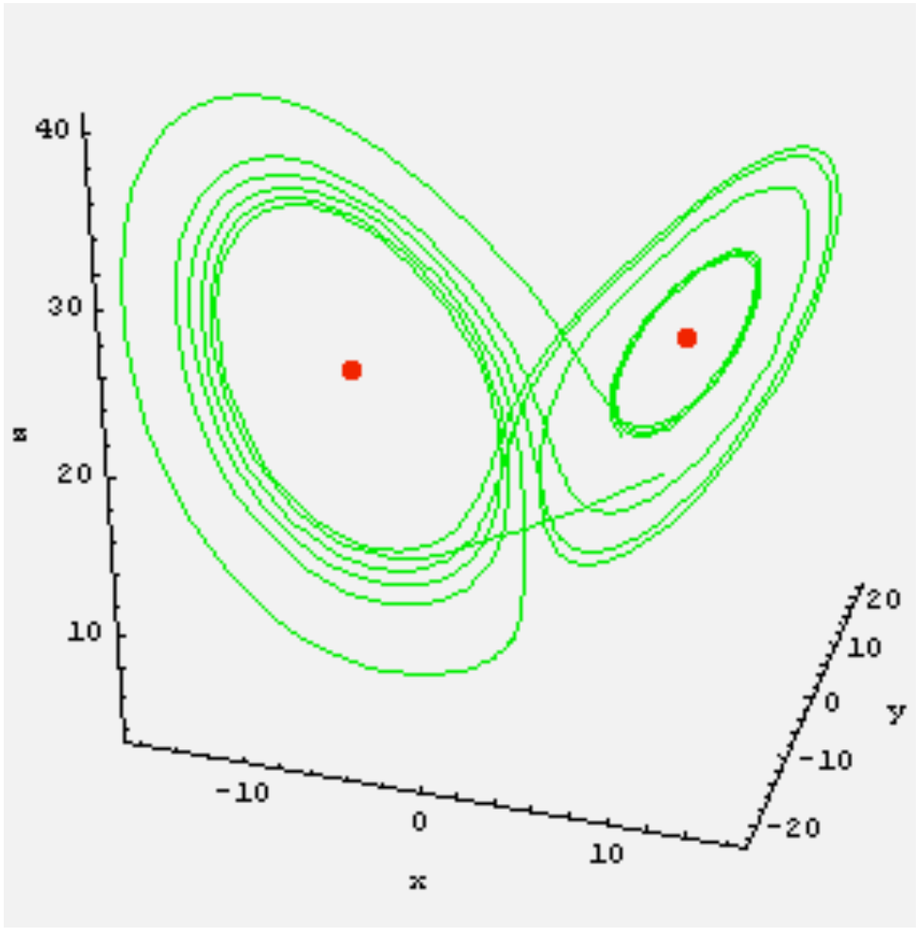
Lorenz Attractor

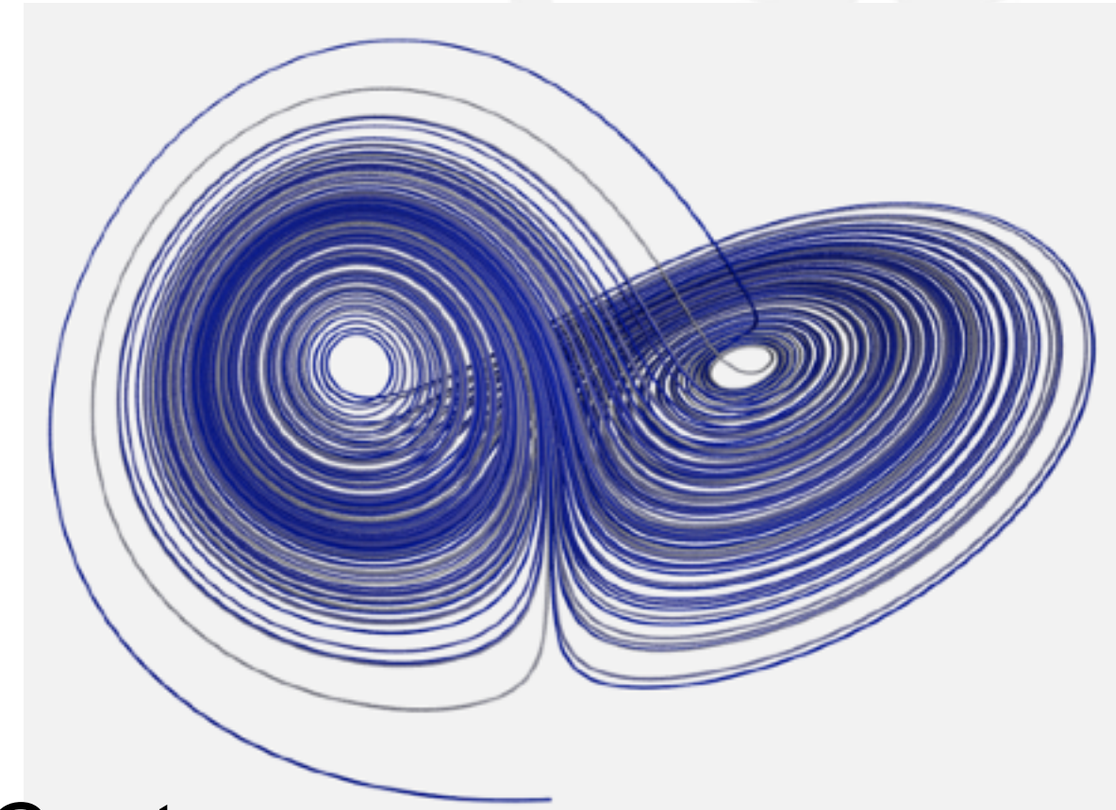
$$\frac{dx}{dt} = a(y - x),$$
$$\frac{dy}{dt} = x(b - z) - y,$$
$$\frac{dz}{dt} = xy - cz.$$

Deterministic Chaos

Maps: linear map, 1D state space

Flows: Need 3 coupled ODEs (ordinary differential equations) Minimum is 3D state space





Lorenz about chaos, fractals, SOC, etc.:
"*Study of things that look random -but are not*"

Double Pendulum - Small Displacement