

## Discrete & continuous nonlinear dynamics

**Lorenz attractor:** In 1962 Lorenz [Tab 89] was looking for a simple model for weather prediction and simplified the heat transport equations to

$$\frac{dx}{dt} = 10(y - x), \quad \frac{dy}{dt} = -xz + 28x - y, \quad \frac{dz}{dt} = xy - \frac{8}{3}z. \quad (12.50)$$

The solution of these simultaneous first-order nonlinear equations gave the complicated behavior that has led to the modern interest in chaos (after considerable doubt regarding the reliability of the numerical solutions).