

# SCMS Seminar



## CANTOR AND SIERPINSKI, JULIA AND FATOU: CRAZY TOPOLOGY IN COMPLEX DYNAMICS

**Speaker: Prof. Robert L. Devaney**

**Boston University**

**Time:** 10:00 - 11:00 a.m., Tuesday, May 9th, 2017

**Venue:** Room 2201, East Guanghua Tower (Main), Fudan University

### Abstract:

In this talk, we shall describe some of the rich topological structures that arise as Julia sets of certain complex functions including the exponential and rational maps. These objects include Cantorbouquets, indecomposable continua, and Sierpinski curves.

$$k_3 = hf \left( x_{i-1} + \frac{h}{2}, y_{i-1} + \frac{k_2^{(i-1)}}{2} \right)$$
$$b_i = \frac{\left( \sum_{j=1}^{i-1} a_{ij} x_j^{(k)} + \sum_{j=i+1}^n a_{ij} x_j^{(k)} \right)}{x_{i+1}}$$
$$\Delta y_i = \int_{x_i}^{x_{i+1}} \frac{y' dx}{b_i - \left( \sum_{j=1}^{i-1} a_{ij} x_j^{(k)} + \sum_{j=i+1}^n a_{ij} x_j^{(k)} \right)}$$
$$\int_{x_k}^{x_{k+1}} f(x, y) dx = \int_{x_k}^{x_{k+1}} y' dx = y(x)$$
$$-\sqrt{(y_n + 0.5\tau k_1)^2 + (t_n + 0.5\tau)^2}$$