ANALYSIS/PDE SEMINAR SERIES

TOPIC: Surface-Volume Growth Model and Scaling Pattern

SPEAKER: Yong Jung Kim, Korea Advanced Institute of Science and Technology

TIME: 3:00pm-4:00pm, Monday, December 11, 2017

VENUE: Room 264, Geography Building, Zhongbei Campus

HOST: Xingbin Pan, East China Normal University

ABSTRACT OF THE TALK

Mutation is a random process. Natural selection is not. If the two are the main driving forces of biological evolution, patterns of existing species should reflect the both. If we find a way to read the randomness in a pattern of existing species, it will help us to understand the nature of the selection and give us the direction where the life evolves to. The purpose of the paper of this talk is to develop a method to read the randomness. In particular, we will focus on a quarter scaling pattern of maximum growth rate of mammals and show that randomness is the dominant reason of the patterns and the natural section pushes the evolution toward body size. The surface-volume growth model is our tool to read the randomness.

BIOGRAPHY

Yong Jung Kim (金容政) was born in Seoul, Korea, in 1965, where he lived until 1992 and finished undergraduate study at Seoul National University. He studied mathematics in USA for his Ph.D. program at University of Wisconsin. He studied Analysis and Partial Differential Equations and completed his Ph.D. under the supervision of Athanasios Tzavaras. He started his research on hyperbolic conservation laws. Recently he is interested in modeling of biological phenomena related ecology, pattern formation, population dynamics, etc.