

SCMS Seminar



MULTIPLICATIVE CHAOS AND APPLICATIONS

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Time: 16:10-17:10, Wednesday, Jan 31st, 2018

Venue: Room 1801, East Guanghua Tower (Main), Fudan University

Abstract:

Multiplicative chaos finds its origin in the study of turbulence (A. Kolmogorov 1960's, B. Mandelbrot 1970's). I will present the general theory formulated by Jean-Pierre Kahane (1980's). The theory provides a construction of random measures, similar to Gibbs measures in dynamical systems. A typical class of examples is that of gaussian multiplication chaos (exponentiation of gaussian processes) and nowadays physicists appreciate it as models of quantum gravitation. Several other applications will also be discussed: Dvoretzky random covering (Dvoretzky, Levy, Kahane, Billard, Erdos, Orey, Shepp et al), almost everywhere convergence of lacunary trigonometric series (Zygmund, Peyriere, Gaposhkin, Berkes), Bohr-density of Bernoulli random integers (Kahane, Katznelson, Malliavin, Bourgain).