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Hong Kong Probability Seminar

<https://sites.google.com/site/hkprobability/>

Program

- **2:00-3:00pm: István Berkes (TU Graz)**

Fluctuations of stochastic processes and strong invariance principles

Abstract: Describing the fluctuations of stochastic processes over short intervals is a basic problem of probability theory with numerous applications in statistics. For example, to detect short term, "epidemic" changes in the structure of time series requires studying the fluctuations of the partial sum process of the sample (X_1, X_2, \dots, X_n) over intervals of length very short compared with n . If X_1, X_2, \dots are i.i.d. Gaussian variables, such results are available from the theory of Wiener process and using the celebrated Komlós-Major-Tusnády (KMT) approximation theorem, these results can be extended to the general i.i.d. case. For the case of weakly dependent sequences, a class covering many important applications, the KMT theorem is not available, except for a few special cases settled recently (Berkes-Liu-Wu 2014, Merlevède and Rio 2015). The purpose of this talk to show that using a simple modification of the elementary Bernstein blocking technique combined with the original KMT result, we can get widely applicable fluctuation results for many weakly dependent models, such as mixing processes, Markov processes, Gaussian processes, etc.

- **3:00-3:30pm: Coffee break**
- **3:30-5:00pm: Jian Song (HKU)**

Long-term asymptotics for (fractional) Anderson models

Abstract: In this talk, I will review our recent results on the long-term behavior of the solutions to the parabolic and hyperbolic Anderson models. The talk will consist of two parts. The first part concerns the existence and uniqueness of the solutions to the (fractional) heat equation and wave equation driven by multiplicative Gaussian noise, and the Feynman-Kac formula for stochastic heat equation. The second part deals with moments Lyapunov exponents for the solutions to the (fractional) Anderson models.

Date: November 17, 2017 (Friday)

Time: 2:00 - 5:00pm

Venue: LT9, Yasumoto International Academic Park (YIA), CUHK

All are welcome

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