THE UNIVERSITY   **OF HONG KONG**

Institute of Mathematical Research
Department of Mathematics

C O L L O Q U I U M

Nonbacktracking spectrum of random matrices

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Abstract

The nonbacktracking matrix has been introduced by Hashimoto in 1988 to obtain a new determinantal formula for the Ihara zeta function on graphs. In 2013, Krzakala et al. have used this matrix for the design of an algorithm to detect communities in social networks. In recent years, this nonbacktracking matrix has been promoted as a powerful tool to analyze the interplay between geometry and spectrum of a graph. In this talk, we will introduce this matrix and give some recent results on the spectrum of random graphs or random matrices which rely on the use of the nonbacktracking matrix.

About the speaker:
Charles Bordenave defended his PhD thesis at École Normale Supérieure (Paris) in 2006 on "Stochastic analysis of spatial networks". He has made significant contributions in the areas of random matrice, random graphs, stochastic networks and stochastic geometry. He is currently an associate editor for the Annals of Probability, the Annals of Applied Probability and the Bernoulli journal. He is the recipient of Marc Yor's Prize of French Academy of Science (2017) and a special Medallion Lecture of the Institute of Mathematical Statistics (2019).

Date:	**April 3, 2019 (Wednesday)**
Time:	**4:00 – 5:00pm**
Venue:	**Room 210, Run Run Shaw Bldg., HKU**

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All are welcome