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THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

SEMINAR ON PROBABILITY

The shape of the front of multidimensional BBM

By

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Abstract

The extrema of branching Brownian motion (BBM)--- i.e., the collection of particles furthest from the origin-- has gained lots of attention in dimension d = 1 due to its significance to the universality class of log-correlated fields, as well as to certain PDEs. In recent years, a description of the extrema of BBM in d > 1 has been obtained. In this talk, we address a geometrical question that can only be asked in d > 1: generate a BBM at some large time t, and draw the boundary formed by the cloud of the BBM particles. What is the shape of this boundary near the extrema-- i.e., the "front" of the BBM? We describe the scaling limit for this front, with scaling exponent 3/2, as an explicit random surface.

Based on joint works with Julien Berestycki, Bastien Mallein, Eyal Lubetzky, and Ofer Zeitouni.

Date: **10 January 2024 (Wednesday)**

Time: **4:00pm**

Venue: **Room 5508 (Lifts 25/26)**

All are Welcome!