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# Analysis Seminar

## On the Geometry of the Growing Ball of First-Passage Percolation

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**Abstract:** In first-passage percolation, one puts i.i.d. nonnegative weights on the nearest-neighbor edges of the integer lattice  $\mathbb{Z}^d$ , and studies the induced (pseudo)metric. It is well-known that a metric ball of radius  $t$ , after rescaled by  $\frac{1}{t}$ , converges to a deterministic limit shape as  $t \rightarrow \infty$ . However, not too much is known about the geometry of a ball for finite  $t$ . In this talk, we will talk about the geometry of a ball of radius  $t$ , by looking at its boundary. We will discuss the size of the boundary of a ball (based on an earlier joint work with M. Damron and J. Hanson), and then we will talk about holes in a ball (based on a recent joint work with M. Damron, J. Gold and X. Shen).

Date: Thursday, 17 August 2023

Time: 2:30 pm – 3:30 pm

Venue: Room 222, Lady Shaw Building,  
The Chinese University of Hong Kong, Shatin

*All are Welcome!*