

Escola de Verão – IM -UFRJ

<http://www.pg.im.ufrj.br/verao.html>

Minicurso na área de Probabilidade

Geodesics in first passage percolation

Palestrante: Daniel Ahlberg (IMPA)

Carga Horária: O minicurso terá duração de 8 horas (quatro aulas de 2 hs cada).

Dias e horário: Dias 6, 8, 10, e 13 de fevereiro de 2017, das 13 às 15hs.

Local: Sala B106a.

Resumo: In first-passage percolation the edges of the \mathbb{Z}^2 nearest-neighbour lattice are equipped with non-negative random weights. The resulting weighted graph induces a random metric on \mathbb{Z}^2 . The study of infinite geodesics in first-passage percolation was pioneered by Newman in the 1990s. The aim of this mini-course will be to describe the ergodic theory for infinite geodesics developed in recent work of Ahlberg-Hoffman, based on previous work of Hoffman and Damron-Hanson. This will lead us to discuss concepts such as coalescence, Busemann functions and random coalescing geodesics, which are key ingredients in this development. Lecture 1: Basics on first-passage percolation and geodesics. Lecture 2: Busemann functions and competing growth. Lecture 3: Random coalescing geodesics. Lecture 4: An ergodic theory for infinite geodesics.