

Mathematics Colloquium



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26 March 2026, 16h15

Room: 1-15
Section of Mathematics
rue du Conseil-Général 7-9

Critical long-range percolation

Abstract: It is conjectured that many models of statistical mechanics have a rich, fractal-like behaviour at and near their points of phase transition, with power-law scaling governed by critical exponents that are expected to depend on the dimension but not on the small-scale details of the model such as the choice of lattice. This is now reasonably well understood in two dimensions and in high dimensions, but remains poorly understood in intermediate dimensions (e.g. $d=3$). I will overview the conjectures around this area and describe recent progress on related problems for models with long-range interactions.

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