

Kai Lai Chung Memorial Lecture
Thursday, January 17th 4:30 p.m.
Bldg 380 – 380C



“A New Link Between Bernoulli Percolation and the Gaussian Free Field”

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Percolation models describe the inside of a porous material. The theory emerged timidly in the middle of the twentieth century before becoming one of the major objects of interest in probability and mathematical physics. In this talk, we prove that Bernoulli percolation on graphs with isoperimetric dimension $d > 4$ undergoes a non-trivial phase transition by exhibiting a new link between Bernoulli percolation and the Gaussian Free Field (GFF). As a corollary, we obtain that the critical point of Bernoulli percolation on infinite Cayley graphs with super-linear growth is strictly smaller than one, thus answering a conjecture of Benjamini and Schramm.

Reception 3:30 - 4:30 pm - 4th floor lounge