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Mathematics and CS Seminar

Computation of the critical point for the random-cluster model on $\mathbb{Z}^2$ via parafermionic observables

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Host: M. Beiglböck, N. Berestycki, L. Erdös, J. Maas

The random-cluster model (or Fortuin-Kasteleyn percolation) plays a key role in studies of models on lattices, as it is connected to many of them, and the results obtained for random-cluster model can be then applied for other models. In this talk I will present another proof of the well-known fact that for the square lattice the critical probability of the random-cluster model pcr is equal to $\frac{\sqrt{q}}{1+\sqrt{q}}$ for q in [1,4]. Unlike other proofs, this one involves the method of parafermionic observables applied to exploration paths in boxes and strips of growing size.
This result was presented in a joint work with E. Mukoseeva during my PhD under the supervision of H. Duminil-Copin.

Joint work with Christopher Lutsko (Bristol).

Tuesday, April 23, 2019 5.30pm
Big Seminar room Ground floor / Office Bldg West (I21.EG.101)

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