Mathematics and CS Seminar

Phase diagram of spin 1 systems

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Systems of spin 1 have a rich phase diagram that includes ferromagnetic, antiferromagnetic, and spin nematic phases (in dimensions three and higher). They can be studied with the help of graphical (random loop) representations, introduced by Tóth and Aizenman-Nachtergaele. The existence of phase transitions can be proved using the method of reflection positivity and infrared bounds.

I will explain a recent conjecture about the joint distribution of the lengths of long loops ("Poisson-Dirichlet") and how this conjecture helps to identify the extremal Gibbs states.

Thursday, June 22, 2017 04:00pm - 06:00pm

IST Austria Campus Big Seminar room Ground floor / Office Bldg West (I21.EG.101)

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