



Forscherguppe 877

Universität Leipzig
Fakultät für Physik und
Geowissenschaften
Institut für Theoretische Physik

Gemeinsames
TKM- / FOR877- Seminar

Am Dienstag, dem 03.05.2011 um 12:30 Uhr spricht

Dr. Nuno Araujo
(ETH Zürich)

über

Explosive Percolation

Percolation is one of the most often applied models in Statistical Physics. Based on random connectivity, this model is characterized by a continuous transition at the percolation threshold. Recent work by Achlioptas, D'Souza, and Spence opens up the possibility of an abrupt (explosive) percolation transition by changing the stochastic rule of bond occupation. We shed some light on how to obtain a discontinuous transition by showing that it is solely necessary to control the size of the largest cluster, demoting the growth of a cluster differing significantly in size from the average one. As expected for a discontinuous transition, with the disclosed stochastic rule, a Gaussian cluster-size distribution and compact clusters are obtained. We also introduce a hybrid model with an additional external parameter, which interpolates between classical and explosive percolation. A tricritical point is identified and the tricritical crossover scaling is analyzed.

Ort: ITP, Großer Seminarraum

Interessenten sind herzlich eingeladen!