June 12 (Thu.) 13:30 – 14:30

Gauge theory picture of an ordering transition in a dimer model

Pierre Pujol　(Université Paul Sabatier)

We study a phase transition in a 3D lattice gauge theory, a "coarse-grained" version of a classical dimer model. Duality arguments indicate that the dimer lattice theory should be dual to a XY model coupled to a gauge eld with geometric frustration, allowing to make connection with the recently introduced deconned quantum criticality. The transition between a Coulomb phase with dipolar correlations and a long range ordered columnar phase is understood in terms of a Higgs mechanism. Monte Carlo simulations of the dual model are made to clarify the nature of the transition.