Contribution ID: **26**   Type: **not specified**

The critical endpoint in the 2-d U(1) gauge-Higgs model at topological angle $\theta = \pi$

Wednesday, 25 July 2018 14:40 (20 minutes)

We investigate the phase structure of the 2-d U(1) gauge-Higgs model at non-vanishing topological angle θ. The sign problem arising from the topological term is avoided by invoking a dual representation of the gauge-Higgs model. This allows us to observe a 1st order transition in the topological charge at the symmetrical point $\theta = \pi$. By using the Villain action to discretize the gauge field dynamics, we implement the corresponding symmetry as an exact Z_2 symmetry of the dual variables.
We perform simulations to determine the critical endpoint of this transition as a function of the mass parameter and, using FSS techniques, show that it falls into the universality class of the 2-d Ising model.

Primary author: Mr GOESCHL, Daniel (University of Graz)

Co-authors: Prof. GATTRINGER, Christof (University of Graz);   Dr TIN, Sulejmanpasic (ENS Paris)

Presenter: Mr GOESCHL, Daniel (University of Graz)

Session Classification: Theoretical Developments

Track Classification: Theoretical Developments