Contribution ID: **223**   Type: **Oral presentation**

Localisation of Dirac modes in finite-temperature $\mathbb{Z}_2$ gauge theory on the lattice

Monday 26 July 2021 14:30 (15 minutes)

The low-lying Dirac modes become localised at the finite-temperature transition in QCD and in other gauge theories, suggesting a general connection between their localisation and deconfinement. The simplest model where this connection can be tested is $\mathbb{Z}_2$ gauge theory in 2+1 dimensions. We show that in this model the low modes in the staggered Dirac spectrum are delocalised in the confined phase and become localised in the deconfined phase. We also show that localised modes correlate with disorder in the Polyakov loop configuration, in agreement with the "sea/islands picture" of localisation. These results further support the conjecture that localisation and deconfinement are closely related.

Primary authors: BARANKA, György (Eötvös Loránd University);   GIORDANO, Matteo (Eötvös Loránd University, Budapest)

Presenter: BARANKA, György (Eötvös Loránd University)

Session Classification: QCD at nonzero Temperature and Density

Track Classification: QCD at nonzero Temperature and Density