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Centre vortex evidence for two finite-temperature QCD phase transitions

Tuesday 4 November 2025 18:00 (1h 30m)

Centre vortices have been shown to underpin confinement and dynamical chiral symmetry breaking. Here we consider the centre vortex geometry of dynamical QCD at finite temperature using the anisotropic FASTSUM ensembles and uncover evidence for two transition temperatures. The first corresponds to the established chiral transition T_c while the second occurs at $T_d \simeq 2\,T_c$. Drawing upon visualisations of the centre vortex structure and statistical analysis of vortex density and cluster extent, we interpret this second transition as the deconfinement transition.

Parallel Session (for talks only)

Vacuum structure and confinement

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