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Impact of Dynamical Fermions on Centre Vortex Structure

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This presentation examines the centre-vortex structure of Monte-Carlo generated gauge-field configurations using modern visualisation techniques. This time, the manner in which light dynamical fermion degrees of freedom impact the centre-vortex structure is explored. Focusing on the thin vortices identified by plaquettes having a non-trivial centre phase, the vortex structure is illustrated through 3D renderings of oriented spatial plaquettes. Time-oriented plaquettes are illustrated by identifying spatial links associated with these non-trivial plaquettes. The impact of light dynamical fermions is not subtle, changing both the density of vortices and the complexity of the vortex structures observed. The role of vortex branching points in full QCD is highlighted in the survey of results presented.

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