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Emergent phenomena from centre vortices in dynamical QCD

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Quark confinement is perhaps the most important emergent property of the theory of quantum chromodynamics. I review recent results studying centre vortices in $SU(3)$ lattice gauge theory with dynamical quarks. Starting from the original Monte Carlo gauge fields, a vortex identification procedure yields vortex-removed and vortex-only backgrounds. The comparison between the original 'untouched' Monte Carlo gauge fields and these so called vortex-modified ensembles supports the notion that centre vortices are fundamental to confinement in full QCD.

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