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Center vortices and gluon mass generation

Monday 26 May 2025 14:15 (30 minutes)

I will show results of a study* using continuum methods establishing a connection between center vortices and gluon mass generation in 3+ 1 dimensions Yang-Mills theory. I will show that such a connection can be established within the Hamiltonian framework by employing a vacuum wavefunctional peaked on center vortices —a framework originally introduced to explain the Wilson loop area law. We derive an analytical expression for the chromomagnetic field correlation function revealing an infrared mass scale.

*D.R. Junior, GK, L.E. Oxman and B.R. Soares

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