

Recent progress in understanding Confinement and Chiral symmetry from Instanton-dyons

Wednesday 9 August 2017 16:30 (30 minutes)

I will talk about the confinement and Chiral symmetry transitions from the perspective of an interacting ensemble of Instanton-dyons in $SU(2)$ for two flavors. The confinement to deconfinement transition is seen as a transition from entropy dominated to energy dominated, due to the size of the Instanton-dyons being dependent on the Polyakov Loop. Towards higher temperatures the Polyakov loop value increases, which decreases the range of the anti-periodic fermionic zero-modes, and restores Chiral symmetry. Changing one fermion flavor to periodic boundary condition restores explicit center symmetry, and results in Chiral symmetry never being restored.

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