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Confinement in G_2 gauge theories

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G_2 is the smallest simple and simply connected lie group with a trivial center. Therefore investigations of G_2 gauge theory may help to clarify the relevance of center symmetry for confinement. Beside this it has an intriguing connection to QCD where the center symmetry is broken by dynamical quarks transforming under the fundamental representation. In both theories the flux tube between static quarks can break due to dynamical particle production. In this talk we will present our results obtained with monte carlo simulations for the static quark-antiquark potential in different representations and we will show casimir scaling at intermediate distances and string breaking at larger distances.

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talk

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