



Mathematical Physics

# Simplicial gauge theory on spacetime

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We define a discrete gauge-invariant Yang-Mills-Higgs action on spacetime simplicial meshes. The formulation is a generalization of classical lattice gauge theory, and we prove consistency of the action in the sense of approximation theory. In addition, we perform numerical tests of convergence towards exact continuum results for several choices of gauge fields in pure gauge theory.

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MSC classes: 2010: 35Q40, 65M50, 74S05, 81T13, 81T25

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