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## Asymptotically free lattice gauge theory in five dimensions

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The first lattice formulation of Lifshitz-type gauge theories is presented. While the Lorentz-invariant Yang-Mills theory is not renormalizable in five dimensions, non-Abelian Lifshitztype gauge theories are renormalizable and asymptotically free. We construct a lattice gauge action and numerically examine the continuum limit and the bulk phase structure.

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