



Holographic description of large N gauge theory

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Based on the earlier work [S.-S. Lee, Nucl. Rev. B 832, 567 (2010)], we derive a holographic dual for the D-dimensional U(N) lattice gauge theory from a first principle construction. The resulting theory is a lattice field theory of closed loops, dubbed as lattice loop field theory which is defined on a lattice version of the (D+1)-dimensional anti-de Sitter space. The lattice loop field theory is well defined non-perturbatively, and it becomes weakly coupled and local in the large N limit with a large 't Hooft coupling.

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