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Abstract for an Invited Paper
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Entanglement and the architecture of spacetime

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I discuss the role of entanglement in the reconstruction of a spacetime geometry in loop quantum gravity. In particular I show that semiclassical solutions of the Hamiltonian constraint are highly-entangled superpositions of spin-network states. Quantum squeezing of the Ashtekar-Lewandowski vacuum provides a new variational tool for solving the constraints and describing a semiclassical spacetime with graviton fluctuations.