Casimir effect in a quantum space-time JAVIER OLMEDO, Louisiana State Univ - Baton Rouge, RODOLFO GAMBINI, Universidad de la Republica, JORGE PULLIN, Louisiana State Univ - Baton Rouge — We study the Casimir effect for large spherical shells. Instead of a continuous background space-time, we consider a recent exact solution of a spherically symmetric vacuum space-time in loop quantum gravity, where the effective geometry becomes discrete. The quantum space-time naturally regularizes the quantum field theory and the correct result for the Casimir effect is obtained without regularization nor renormalization. This shows that quantum geometry can help to deal with the infinities of quantum field theory.

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