

## Physics Theory Seminar

Monday, February 19, 2018 / Pupin Hall Theory Center, 8<sup>th</sup> Floor / 2:10 PM

### "Quantum Focusing and the Quantum Null Energy Condition"

Raphael Bousso, UC Berkeley

The study of black holes has revealed a deep connection between quantum information and spacetime geometry. Its origin must lie in a quantum theory of gravity, so it offers a valuable hint in our search for a unified theory. Precise formulations of this relation recently led to new insights in Quantum Field Theory, some of which have been rigorously proven. An important example is our discovery of the first universal lower bound on the local energy density. The energy near a point can be negative, but it is bounded below by a quantity related to the information flowing past the point.

