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Quantum Geometry and the Holometer Experiment

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Abstract

Fermilab is conducting an experiment sensitive to effects of quantum gravity at the Planck scale. Inspired by the Holographic Principle, we calculate the "holographic noise" when measuring location, defined by position in two non-degenerate directions. We use power recycled Michelson interferometers to measure the location of the beam splitter. I will discuss the experimental strategy and progress of construction and commissioning.