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Particle Detectors on Causal Sets BENJAMIN PILGRIM, University of Mississippi — Causal set theory is an approach to quantum gravity which replaces Lorentzian manifolds with a discrete set of points and a partial order collectively called a causal set. In this talk, a simple model for a particle detector will be used for causal sets embedded in both two and four-dimensional Minkowski space with free quantum scalar fields propagating on them. Evidence will be presented that even along geodesics, the detector will register particles, and these detections do not vanish in the infinite density limit in the case of four dimensions providing a potential avenue to test the validity of causal set theory.

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