

Abstract Submitted  
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**Causal Tapestries** WILLIAM SULIS, McMaster University — Causal sets provide one of many approaches to the problem of quantum gravity. Causal tapestries generalize the concept of a causal set, extending the range of putative dynamics from sequential growth to include iterative and non deterministic methods, and the range of embedding manifolds to include those with curvature. Like causal sets, causal tapestries are manifestly Lorentz invariant in spite of possessing a form of “transient now”. It is shown that the order relations of the local causal structures must possess an order theoretic (Dushnik & Miller) dimension not exceeding the topological dimension of the embedding manifold and the finite free dimension is bounded by the number of elementary processes generating the causal relations.

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