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Talk title:
padic tensor network and emergent Einstein equation.

Abstract:
We take the tensor network describing explicit p-adic CFT partition functions proposed in [1], and considered boundary conditions of the network describing a deformed Bruhat-Tits (BT) tree geometry. We demonstrate that this geometry satisfies an emergent graph Einstein equation in a unique way that is consistent with the bulk effective matter action encoding the same correlation function as the tensor network, at least in the perturbative limit order by order away from the pure BT tree. Moreover, the (perturbative) definition of the graph curvature in the Mathematics literature [2–4] naturally emerges from the consistency requirements of the emergent Einstein equation. This could provide new insights into the understanding of gravitational dynamics potentially encoded in more general tensor networks.