Abstract

Quantum Information

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Dynamics and fields for holographic codes

Joint with Deniz Stiegemann

I describe how to introduce dynamics for the holographic states and codes introduced by Pastawski, Yoshida, Harlow and Preskill as quantum-information inspired toy models of the AdS/CFT correspondence. This task requires the definition of a continuous limit of the kinematical Hilbert space of a finite which may be achieved via the semicontinuous limit of Jones. Dynamics is then introduced by building a unitary representation of a group known as Thompson's group T, which is a discretised analogy of the conformal group $\mathrm{conf}(\mathbb{R}^{1,1})$. Field operators may be defined for the boundary theory yielding a theory with discrete scaling symmetry.