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How NBWF cosmology is consistent with causal QC/ED particle CFT and its AdS dual preserves information WAYNE R. LUNDBERG[1], None — The no-boundary wave function includes a prescription for restoring causality to particle theory via instantons. To leading order in h, the instanton wave function terms I_R and S correspond to area and curvature of a finite representation. For QG theories in which the gravitational quantum has an area, such as Ambjorn dynamical triangulation, the imaginary S term represents particle energy. This establishes the form of the action as required to pass the Seiberg, Susskind & Toumbas (IASSNS 2000) Causality criterion. By following Harari's approach to preon algebra and the eight-fold way, a non-commutative algebra is setup with 1-1 correspondence to band theory. A band is defined as a closed string with intrinsic curvature/tension/energy. Thus a finitary, causal CFT is established which has an AdS-2 dual space in the deep-deep throat of an information-preserving black hole. The geometry of the 'extra' scalar field of such an I-PBH is shown to be astrophysically vast and smooth - and thus is a candidate explanation for the observational signature of dark matter.

[1]existing APS 08 posters for background

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None

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