



Department of
Theoretical Physics

THE QUANTUM SPACETIME SEMINAR SERIES

Cosmology from vacuum physics

(Zoom Seminar)

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Date: February 21, 2022

Time: 10.00 AM IST

Zoom link shall be shared separately



We discuss a holographic approach to describing cosmological physics. The cosmological spacetime is encoded in a special state of a four-dimensional quantum field theory that is not conventionally holographic. The state is produced via a Euclidean path integral that includes a three-dimensional holographic theory at a boundary in the Euclidean past. The same Euclidean path integral can be used to define a dual static spacetime, and the many of the observables in the cosmology are equivalent to vacuum observables in the static spacetime. This duality has interesting consequences, for example it gives a simple explanation for correlations between regions of the universe that apparently were never in causal contact. The model gives an effective field theory whose fundamental constant that is negative, but generically will have a phase of accelerated expansion via a rolling scalar.

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