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## Entanglement in quantum cosmology

*Wednesday 19 June 2024 11:30 (30 minutes)*

We investigate the quantum entanglement between spacetime geometry and matter during a quantum cosmological bounce and a subsequent possible inflationary period. We find that entanglement entropy does not monotonically increase in the early universe and is therefore not an “arrow of time”, and that the emergence of a (semi-)classical inflating universe from a quantum gravity era is not guaranteed in the model we studied.

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