JOINT TUFTS/MIT COSMOLOGY SEMINAR

A quantum-classical duality and emergent space-time

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We consider the quantum partition function for a system of quantum spinors and then derive an equivalent (or dual) classical partition function for some scalar degrees of freedom. The coupling between scalars is non-trivial (e.g. a model on 2-sphere configuration space), but the locality structure of the dual system is preserved, in contrast to the imaginary time formalism. We also show that the measure of integration in the classical partition function can be formally expressed through relativistic Green's functions which suggests a possible mechanism for the emergence of a classical space-time from anti-commutativity of quantum operators.

Tuesday, October 1, 2019, 2:30 pm

574 Boston Ave, Room 316

Tufts University

Refreshments at 2:00 outside room 304