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Recent Developments of Euclidean Dynamical Triangulations with Non-Trivial Measure Term

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Dynamical Triangulations might provide a tool to discover asymptotic safety in quantum gravity. This scenario is based on scale invariance which is realized at an interacting fixed point of the renormalization group flow. In this spirit, asymptotically safe quantum gravity is a quantum field theoretic approach to quantum gravity. On the lattice, asymptotic safety would be realized as a continuous phase transition in Dynamical Triangulations. The original formulation of Euclidean Dynamical Triangulations (EDT) is known to lack a continuous phase transition in $d=4$ dimensions. However, recent studies suggest that a modified version of EDT, which includes a local measure term, could exhibit a phase transition, leading to a well-behaved semi-classical limit. In this talk, I will review the current status of EDT with a non-trivial measure term and highlight emerging evidence that supports the possibility of a continuous phase transition. Finally, I will provide an outlook on ongoing research and on future studies.

Topical area

Theoretical Developments

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