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Exploring the phase diagram of Euclidean dynamical triangulations

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I present the results of a study of Euclidean dynamical triangulations (EDT) in an attempt to formulate a theory of quantum gravity and to make contact with Weinberg's asymptotic safety scenario. There are two unphysical phases appearing in EDT, neither of which resembles semiclassical gravity. When the phase diagram is enlarged by including a nontrivial measure term a new region of the phase diagram dubbed the "crinkled" region appears. It is shown that this region does not behave like semiclassical gravity, despite initial optimism. Attempts to reconcile this behavior with the results found in functional renormalization group studies that support asymptotic safety are discussed.

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