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Quantum Gravity in Static Spherically Symmetric Spacetime

Tuesday, 24 February 2026 12:10 (20 minutes)

A new canonical quantization framework for static spherically symmetric spacetimes is presented. For a proof-of-principle, the Einstein-Hilbert action is considered. We recover the classical solution and further investigate the quantum uncertainty relations arising among the geometric operators. Our analysis uncovers an intriguing relation to black holes and generalized uncertainty relations. Moreover, for a given cosmological constant Λ, we obtain upper and lower limit of the mass that is allowed, where they have a stunning relation to observed bounds for the known Λ.

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