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Quasiclassical solutions for static quantum black holes

Wednesday 15 May 2024 16:45 (15 minutes)

A new form of quasiclassical space-time dynamics for constrained systems reveals how quantum effects can be derived systematically from canonical quantization of gravitational systems. These quasiclassical methods lead to additional fields, representing quantum fluctuations and higher moments, that are coupled to the classical metric components. The new fields describe nonadiabatic quantum dynamics and can be interpreted as implicit formulations of nonlocal quantum corrections in a field theory. This field-theory aspect is studied here for the first time, applied to a gravitational system for which a tractable model is constructed. Static solutions for the relevant fields can be obtained in almost closed form. They reveal new properties of potential near-horizon and asymptotic effects in canonical quantum gravity and demonstrate the overall consistency of the formalism.

Mini Symposia (Invited Talks Only)

Plenary (Invited talks only)

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