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**Can effects of quantum gravity be observed in the cosmic microwave background?**

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We investigate the question whether small quantum-gravitational effects can be observed in the anisotropy spectrum of the cosmic microwave background radiation. An observation of such an effect is needed in order to discriminate between different approaches to quantum gravity. Using canonical quantum gravity with the Wheeler-DeWitt equation, we find a suppression of power at large scales. Current observations only lead to an upper bound on the energy scale of inflation, but the framework is general enough to study other situations in which such effects might indeed be seen.

Reference: C. Kiefer and M. Krämer, Quantum Gravitational Contributions to the Cosmic Microwave Background Anisotropy Spectrum, Phys. Rev. Lett. 108, 021301 (2012).