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Does the size of the one-loop correction rule out PBH formation?

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To produce an appreciable quantity of primordial black holes (PBHs), there needs to be a significant enhancement of the amplitude of the primordial power spectrum at short-scales. Large enhancements on short-scales, however, can induce a large contribution to the one-loop correction to the power spectrum on CMB scales. The size of this correction has been hotly debated since Kristiano and Yokoyama's claim that, in a wide class of PBH-producing models, the loop correction to CMB scales is too large and breaks perturbativity. In this talk we'll explore some of the key points of contention in the literature and present new results for the loop correction computed numerically from a potential.

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