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Spacetime Foam and the Cosmological Constant[1] STEVEN CARLIP, University of California, Davis — Sixty-five years ago, John Wheeler suggested that Planck-scale quantum fluctuations of geometry and topology—"spacetime foam"—might be important for understanding the cosmological constant. Twenty years later, Stephen Hawking initiated an exploration of this proposal through Euclidean path integral techniques. Here, I report on further progress, based on a canonical approach to quantum gravity and recent advances in the initial value formalism, that suggests that spacetime foam may indeed be capable of "hiding" a large cosmological constant.

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