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Convergence stability for the Ricci flow. Preliminary report.

Suppose that the solution to a geometric flow with initial metric g exists for all time and converges to a fixed-point geometry that is stable in an appropriate sense. We say the geometric flow is convergence stable if there is a neighborhood of the initial metric g (in an appropriate topology) such that the flow emanating from any metric in this neighborhood exists for all time and converges to a fixed-point geometry. In this talk we use semigroup methods to give a proof of continuous dependence of the Ricci flow in a certain topology, and then show that a Ricci flow converging to a flat metric on the 3-torus is convergence stable. We then explain our prospects for extending this result to noncompact manifolds. (Received February 06, 2018)