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John W Lott* (lott@umich.edu), Department of Mathematics, University of Michigan, Ann Arbor, MI 48109-1043. *Long-time behaviour of type-III Ricci flow solutions.*

We show that three-dimensional homogeneous Ricci flow solutions that admit finite-volume quotients have long-time limits given by expanding solitons. We show that the same is true for a large class of four-dimensional homogeneous solutions. We give an extension of Hamilton's compactness theorem that does not assume a lower injectivity radius bound, in terms of Riemannian groupoids. Using this, we show that the long-time behavior of type-III Ricci flow solutions is governed by the dynamics of an \mathbf{R}^+ action on a compact space. (Received February 06, 2006)