

MR911758 (89h:58153) 58F15**Ghys, Étienne (F-LILL)****Flots d'Anosov dont les feuilletages stables sont différentiables. (French) [Anosov flows whose stable foliations are differentiable]***Ann. Sci. École Norm. Sup. (4)* **20** (1987), no. 2, 251–270.

In this paper, a characterization is given of Anosov flows on 3-manifolds whose stable and unstable foliations are C^∞ . It is shown that all such flows are obtained by making a special kind of change of parametrization of an algebraic flow. Examples are given of such flows which are not C^0 conjugate to an algebraic flow. Moreover, this paper proves a conjecture of S. Hurder and A. Katok: If a negative curvature C^∞ metric on a compact surface has C^2 horocycle foliation, then the curvature must be constant. For related results in higher dimensions, see the subsequent papers by M. Kanai [*Ergodic Theory Dynamical Systems* **8** (1988), no. 2, 215–239] and by R. Feres and Katok [“Rigidity of geodesic flows on negatively curved manifolds of dimensions 3 and 4”, Preprint, 1988; per revr.].

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