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Title:

Dominated splitting and zero volume for incompressible three flows

Abstract:

In a joint work with M. Bessa (CMUP), we prove that there exists an open and dense subset of the incompressible 3-flows of class C^2 such that, if a flow in this set has a positive volume regular invariant subset with dominated splitting for the linear Poincaré flow, then it must be an Anosov flow. With this result we are able to extend the dichotomy of Bochi–Mañé for flows with singularities. That is, we obtain for a residual subset of the C^1 incompressible flows on 3-manifolds that: either all Lyapunov exponents are zero or the flow is Anosov.