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5. Differential Geometry and Global Analysis

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Foliations, finitely generated groups and pseudogroups of transformations of manifolds carry some dynamics

Entropy of such systems was studied by Ghys, Langevin, Walczak (Acta Math., **160**, 1988). Attie and Hurder (Topology, **35**, 1996) applied entropy to produce examples of complete Riemannian manifolds which cannot be quasi-isometric to leaves of foliations of compact manifolds. Recently, we constructed examples of *virtual leaves*, i. e. complete surfaces which are not quasi-isometric to leaves as above but which, for any $\delta > 0$, are quasi-isometric to δ-pseudoleaves of fixed compact foliated manifolds. This is possible since the dynamics of pseudo-orbits of finitely generated groups can be more chaotic than the dynamics of true orbits.

Here, we intend to review main results concerning entropy of foliations and to describe the examples mentioned above.