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MR800011 (88d:57022) <u>Hurder, Steven</u> (1-MSRI) Foliation dynamics and leaf invariants. <u>Comment. Math. Helv.</u> 60 (1985), <u>no. 2</u>, 319–335. <u>57R30 (58F18 58H15)</u>



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Let \mathcal{F} be a foliation of codimension n on a smooth manifold M without boundary. Assume \mathcal{F} is transversally C^2 . The purpose of this paper is to examine the relation between the linear holonomy of the leaves of \mathcal{F} and the growth rates of the leaves.

Above all, the following results are obtained. Theorem 1: Let \mathcal{F} and M be as above. Given a leaf L of \mathcal{F} , suppose its linear holonomy group $\Gamma_L \subset \operatorname{GL}(n, \mathbb{R})$ is not amenable. Then \mathcal{F} has a leaf L' which contains L in its closure, and for all Riemannian metrics on M, L' has exponential growth. Theorem 2: Let \mathcal{G} be a pseudogroup of local diffeomorphisms of \mathbb{R}^n , all of whose elements are defined at and fix the origin $0 \in \mathbb{R}^n$, and are C^2 in a neighborhood of 0. Let Γ denote the linear group of Jacobians at 0 of the elements of \mathcal{G} . If Γ is not amenable, then the action of \mathcal{G} on \mathbb{R}^n has an orbit with exponential growth and which contains 0 in its closure.

Reviewed by Masahisa Adachi

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