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Leafwise homotopy equivalence and rational Pontrjagin classes. (English) Zbl 0641.57008
Foliations, Proc. Symp., Tokyo 1983, Adv. Stud. Pure Math. 5, 1-14 (1985).

[For the entire collection see [Zbl 0627.00017](#).]

The main result of this paper is: Theorem. Let (V', F') and (V, F) be infinitely differentiable orientable foliations with V and V' compact. Let $f: V' \rightarrow V$ be a leafwise homotopy equivalence. Assume that (V, F) has negatively curved leaves. Then f preserves the rational Pontrjagin classes. Here the term “negatively curved leaves” means that there is an infinitely differentiable Euclidean structure for F such that each leaf has all sectional curvatures non-positive. The other terms are largely self explanatory. The authors observe that this result is related to Novikov’s theorem, in that, for point foliations the corresponding statement is that homeomorphisms preserve Pontrjagin classes. Also they extend the ideas to a generalized Novikov conjecture for foliations.

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MSC:

57R30 Foliations in differential topology; geometric theory
57R20 Characteristic classes and numbers in differential topology

Cited in **1** Review
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Keywords:

differentiable orientable foliations; leafwise homotopy equivalence; negatively curved leaves; rational Pontrjagin classes; generalized Novikov conjecture for foliations