zbMATH Open
THE FIRST RESOURCE FOR MATHEMATICS

Saralegui, M.

The Euler class for flows of isometries. (English) Zbl 0651.57018

Differential geometry, Proc. 5th Int. Colloq., Santiago de Compostela/Spain 1984, Res. Notes Math. 131, 220-227 (1985).

[For the entire collection see Zbl 0637.00004.]

A flow of isometries is defined as a 1-dimensional orientable Riemannian foliation $\mathcal{F}$ on a compact manifold M for which there exists a Riemannian metric g on M and a unit vector field Z tangent to $\mathcal{F}$ generating a group of isometries (ψ_t), $t \in \mathbb{R}$. The Euler class of $\mathcal{F}$ is shown to vanish when (M,$\mathcal{F}$) is a foliated bundle and to be non-zero when $\mathcal{F}$ is a contact flow (i.e. when there exists a contact form ω on M such that the unique vector field Y on M defind by $\omega(Y) = 1$ and $d\omega(Y, \cdot) = 0$ is tangent to $\mathcal{F}$).

Reviewer: P.Walczak

MSC:

57R30 Foliations in differential topology; geometric theory
57R20 Characteristic classes and numbers in differential topology
53C12 Foliations (differential geometric aspects)
57R15 Specialized structures on manifolds (spin manifolds, framed manifolds, etc.)

Keywords:

flow of isometries; 1-dimensional orientable Riemannian foliation; Euler class; foliated bundle; contact flow