Zeitschrift: L'Enseignement Mathématique
Herausgeber: Commission Internationale de l'Enseignement Mathématique
Band: 53 (2007)
Heft: 1-2

Artikel: Finiteness properties of characteristic classes of lat bundles
Autor: Bucher-Karlsson, Michelle
Bibliographie
DOI: https://doi.org/10.5169/seals-109538

Nutzungsbedingungen
Die ETH-Bibliothek ist die Anbieterin der digitalisierten Zeitschriften auf E-Periodica. Sie besitzt keine Urheberrechte an den Zeitschriften und ist nicht verantwortlich für deren Inhalte. Die Rechte liegen in der Regel bei den Herausgebern beziehungsweise den externen Rechteinhabern. Das Veröffentlichen von Bildern in Print- und Online-Publikationen sowie auf Social Media-Kanälen oder Webseiten ist nur mit vorheriger Genehmigung der Rechteinhaber erlaubt. Mehr erfahren

Conditions d'utilisation
L'ETH Library est le fournisseur des revues numérisées. Elle ne détient aucun droit d'auteur sur les revues et n'est pas responsable de leur contenu. En règle générale, les droits sont détenus par les éditeurs ou les détenteurs de droits externes. La reproduction d'images dans des publications imprimées ou en ligne ainsi que sur des canaux de médias sociaux ou des sites web n'est autorisée qu'avec l'accord préalable des détenteurs des droits. En savoir plus

Terms of use
The ETH Library is the provider of the digitised journals. It does not own any copyrights to the journals and is not responsible for their content. The rights usually lie with the publishers or the external rights holders. Publishing images in print and online publications, as well as on social media channels or websites, is only permitted with the prior consent of the rights holders. Find out more

Download PDF: 07.01.2026

ETH-Bibliothek Zürich, E-Periodica, https://www.e-periodica.ch

where k is an oriented q-dimensional simplex of K, is a cocycle representing $f^*(\beta) \in H^q_{\text{simpl}}(K)$. Because BG_q is compact and f is semi-algebraic of uniformly bounded complexity on every simplex k of K, it follows that $\int_{f_*(k)} \omega$ is uniformly bounded, so that $f^*(\beta)$ is represented by a uniformly bounded cocycle. The bound is independent of K and f.

FINITENESS. From appropriate triangulations of the Cartesian products G^i, for $i = 0, \ldots, q$, it is not hard (but rather cumbersome) to exhibit a triangulation of the model of the classifying space BG given by the join construction which projects, via the natural projection $BG \to \Delta^q$ onto the first barycentric subdivision of Δ^q. A classifying map $f\colon |K| \to BG^\delta \to BG$ having the property that, composed with the natural projection $BG \to \Delta^q$, it maps simplices of K isomorphically to simplices of Δ^q (such a map can always be found), does admit a simplicial approximation, upon passing to the *first* barycentric subdivision of K. The set I of Theorem 4 is hence potentially much sharper. However, we are not aware of explicit triangulations of the products G^i's.

REFERENCES

[BeRi] BENEDETTI, R. and J.-J. RISLER. *Real Algebraic and Semi-Algebraic Sets*. Actualités Mathématiques [Current Mathematical Topics]. Hermann, Paris, 1990.

[Bo] BOREL, A. *Linear Algebraic Groups*. Second edition. Graduate Texts in Mathematics *126*. Springer-Verlag, New York, 1991.

[Ca] CARTAN, H. La transgression dans un groupe de Lie et dans un espace fibré principal. *Colloque de topologie (espaces fibrés)*. George Thone, Liège, (1950), 57–71.

[Gh1] GHYS, É. Groupes d'homéomorphismes du cercle et cohomologie bornée. *The Lefschetz centennial conference, Part III (Mexico City, 1984). Contemp. Math. 58, III*, (1987), 81–106.

[Gh2] —— Groups acting on the circle. *A paper from the 12th Escuela Latino-americana de Matemáticas (XII-ELAM) held in Lima, June 28–July 3, 1999.*

[Go] GOLDMAN, W. M. Flat bundles with solvable holonomy. II. Obstruction theory. *Proc. Amer. Math. Soc. 83* (1981), 175–178.

[Gr] GROMOV, M. Volume and bounded cohomology. *Inst. Hautes Études Sci. Publ. Math. 56* (1982), 5–99.

[Hi] HIRONAKA, H. Triangulations of algebraic sets. Algebraic geometry (*Proc. Sympos. Pure Math. 29, Humboldt State Univ., Arcata, Calif., 1974*). Amer. Math. Soc., Providence, R.I. (1975), 165–185.

[IvTu] IVANOV, N. V. and V. G. TURAEV. A canonical cocycle for the Euler class of a flat vector bundle. *Soviet Math. Dokl. 26* (1982), 78–81.

[Mi] MILNOR, J. On the existence of a connection with curvature zero. *Comment. Math. Helv. 32* (1958), 215–223.

[Su] SULLIVAN, D. A generalization of Milnor's inequality concerning affine foliations and affine manifolds. *Comment. Math. Helv. 51* (1976), 183–189.

[Wo] WOOD, J. Bundles with totally disconnected structure group. *Comment. Math. Helv. 46* (1971), 257–273.

(Reçu le 15 septembre 2006)

Michelle Bucher-Karlsson

Royal Institute of Technology
100 44 Stockholm
Sweden
e-mail: mickar@math.kth.se