

**Zeitschrift:** L'Enseignement Mathématique  
**Herausgeber:** Commission Internationale de l'Enseignement Mathématique  
**Band:** 46 (2000)  
**Heft:** 1-2: L'ENSEIGNEMENT MATHÉMATIQUE

**Artikel:** GEOMETRIC K-THEORY FOR LIE GROUPS AND FOLIATIONS  
**Autor:** BAUM, Paul / CONNES, Alain  
**Bibliographie**  
**DOI:** <https://doi.org/10.5169/seals-64793>

### **Nutzungsbedingungen**

Die ETH-Bibliothek ist die Anbieterin der digitalisierten Zeitschriften. 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. [Siehe Rechtliche Hinweise.](#)

### **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. [Voir Informations légales.](#)

### **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. [See Legal notice.](#)

**Download PDF:** 18.04.2025

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

## REFERENCES

- [1] ATIYAH, M. F. Bott periodicity and the index of elliptic operators. *Quart. J. Math. Oxford Ser. (2)* 19 (1968), 113–140.
- [2] ——— *Elliptic Operators and Compact Groups*. Lecture Notes in Math. 401. Springer-Verlag, 1974.
- [3] ——— Elliptic operators, discrete groups and von Neumann algebras. *Astérisque* 32/33 (1976), 43–72.
- [4] ATIYAH, M. F. and W. SCHMID. A geometric construction of the discrete series for semisimple Lie groups. *Invent. Math.* 42 (1977), 1–62.
- [5] ATIYAH, M. F. and G. B. SEGAL. The index of elliptic operators, II. *Ann. of Math. (2)* 87 (1968), 531–545.
- [6] ATIYAH, M. F. and I. M. SINGER. The index of elliptic operators, I. *Ann. of Math. (2)* 87 (1968), 484–530; The index of elliptic operators, III. *Ann. of Math. (2)* 87 (1968), 546–604.
- [7] ATIYAH, M. F. and I. M. SINGER. The index of elliptic operators, IV. *Ann. of Math. (2)* 93 (1971), 119–138.
- [8] ATIYAH, M. F. and I. M. SINGER. The index of elliptic operators, V. *Ann. of Math. (2)* 93 (1971), 139–149.
- [9] BAUM, P. and R. DOUGLAS.  $K$ -homology and index theory. *Operator algebras and applications, Proc. Symposia Pure Math.* 38 (1982), Part I, 117–173.
- [10] BOREL, A. Letter to P. Baum, 1982.
- [11] CAPPELL, S. E. On homotopy invariance of higher signatures. *Invent. Math.* 33 (1976), 171–179.
- [12] CONNES, A. Sur la théorie non commutative de l'intégration. *Algèbres d'opérateurs*. Lecture Notes in Math. 725, Springer-Verlag, (1979), 19–143.
- [13] ——— An analogue of the Thom isomorphism for crossed products of a  $C^*$ -algebra by an action of  $\mathbf{R}$ . *Adv. in Math.* 39 (1981), 31–55.
- [14] ——— A survey of foliations and operator algebras. *Operator algebras and applications. Proc. Symposia in Pure Math.* 38 (1982), Part 1, 521–628.
- [15] CONNES, A. and H. MOSCOVICI. The  $L^2$ -index theorem for homogeneous spaces of Lie groups. *Ann. of Math. (2)* 115 (1982), 291–330.
- [16] ELLIOTT, G. A. On the  $K$ -theory of the  $C^*$ -algebra generated by a projective representation of a torsion-free, discrete abelian group. In: *Operator Algebras and Group Representations*, Vol. I (Neptun, 1980), *Monographs Stud. Math.* 17, Pitman (1985), 157–184.
- [17] HELGASON, S. *Differential Geometry and Symmetric Spaces*. Academic Press, 1962.
- [18] KASPAROV, G. G. The operator  $K$ -functor and extensions of  $C^*$ -algebras. *Izv. Akad. Nauk SSSR, Ser. Mat.* 44 (1980), 571–636; *Math. USSR Izv.* 16 (1981), 513–572.
- [19] ———  $K$ -theory, group  $C^*$ -algebras, and higher signatures (Conspectus), (first distributed 1981), In: *Novikov Conjectures, Index Theorems and Rigidity*, Vol. 1, S. C. Ferry, A. Ranicki and J. Rosenberg Editors, London Math. Soc. Lecture Notes 226, Cambridge Univ. Press (1995), 101–146.

- [20] — Index of invariant elliptic operators,  $K$ -theory and representations of Lie groups (Russian). *Dokl. Akad. Nauk SSSR* 268 no 3 (1983), 533–537.
- [21] MISCHENKO, A. S.  $C^*$ -algebras and  $K$ -theory, *Algebraic Topology, Aarhus 1978*. Lecture Notes in Math. 763, Springer-Verlag, 1979, 262–274.
- [22] MISCHENKO, A. S. and A. T. FOMENKO. The index of elliptic operators over  $C^*$ -algebras. *Izv. Akad. Nauk SSSR, Ser. Mat.* 43 (1979), 831–859; *Math. USSR Izv.* 15 (1980), 87–112.
- [23] PALAIS, R. On the existence of slices for actions of non-compact Lie groups. *Ann. of Math.* (2) 73 (1961), 295–323.
- [24] PASSMAN, D. S. *The Algebraic Structure of Group Rings*. Wiley-Interscience, 1977.
- [25] PENNINGTON, M.  $K$ -theory and  $C^*$ -algebras of Lie groups and foliations. PhD Thesis, Oxford, Michaelmas term, 1983. (Part of this has appeared in [25'].)
- [25'] PENNINGTON, M. and R. J. PLYMEN. The Dirac operator and the principal series for complex semisimple Lie groups. *J. Funct. Anal.* 53 (1983), 269–286.
- [26] PIMSNER, M. and D. VOICULESCU. Exact sequences for  $K$ -groups and Ext-group of certain crossed product  $C^*$ -algebras. *J. Operator Theory* 4 (1980), 93–118.
- [27] PIMSNER, M. and D. VOICULESCU.  $K$ -groups of reduced crossed products by free groups. *Increst preprint series in Math.* 62 (1981).
- [28] PLYMEN, R. Proof of Connes' conjecture for complex semi-simple groups. Univ. of Manchester preprint, 1982. See also M. G. Pennington and R. J. Plymen, The Dirac operator and the principal series for complex semisimple Lie groups. *J. Funct. Anal.* 53 (1983), 269–286.
- [29] RIEFFEL, M. A.  $C^*$ -algebras associated with irrational rotations. *Pacific J. Math.* 93 (1981), 415–429.
- [30] ROSENBERG, J.  $C^*$ -algebras, positive scalar curvature, and the Novikov conjecture. *Publ. Math. I.H.E.S.* 58 (1983), 197–212. (Appendix to "Positive scalar curvature and the Dirac operator on complete Riemannian manifolds" by M. Gromov and H. B. Lawson, Jr. *Publ. Math. I.H.E.S.* 58 (1983), 83–196.)
- [31] SEGAL, G. B. Equivariant  $K$ -theory. *Publ. Math. I.H.E.S.* 34 (1968), 129–151.
- [32] TORPE, A. M.  $K$ -theory for the leaf space of foliations by Reeb components. *J. Funct. Anal.* 61 (1985), 15–71.
- [33] WINKELNKEMPER, H. E. The graph of a foliation. *Ann. Global Anal. Geom.* 1 (1983), 51–75.