ICM 1998, Berlin, Aug. 18–27

Abstracts of Short Communications and Posters

Section:

6. Topology

1991 MS Classification: 19,57,58
Mishchenko Alexander S., Moscow State University, Russia
Local combinatorial Hirzebruch formula
The Hirzebruch formula sign$X = 2^{2k}\langle L(X), [X]\rangle$, $\dim X = 4k$, can be generaized in different ways. In combinatorial case the Hirzebruch formula is known for different variants of representations ρ for fundamental group $\pi_1(X)$: $sign_\rho(X) = 2^{2k}\langle L(X)ch\xi_\rho, [X]\rangle$. We shall present similar formula for arbitrary vector bundle ξ. The main idea due to M. Gromov consits of considering an almost flat structure of the vector bundle ξ on the manifold X to immitate the Poincare duality in cohomology of the manifold X with coefficients in the bundle ξ.
References: 1. A. S. Mishchenko, Homotopy invariants of nonsimply connected manifolds. I. Rational invariants. *Math. USSR Izvestija* **4** (1970), . No.3, 506–519.
2. M. Gromov, Positive curvature, Macroscopic dimension, Spectral Gaps and Higher signatures, Functional Anal. on the Eve og the 21st Century, v. II. Progress in Math., Basel–Boston: Birkhauser vol. 132, 1995.