Alesker, Semyon

On convergence of intrinsic volumes of Riemannian manifolds. (English) [Zbl 07493141]

J. Geom. 113, No. 1, Paper No. 23, 14 p. (2022)

Summary: Let \( \pi: M \to B \) be a Riemannian submersion of two compact smooth Riemannian manifolds, \( B \) is connected. Let \( M(\varepsilon) \) denote the manifold \( M \) equipped with the new Riemannian metric which is obtained from the original one by multiplying by \( \varepsilon \) along the vertical subspaces (i.e. along the fibers) and keeping unchanged along the (orthogonal to them) horizontal subspaces. Let \( V_i(M(\varepsilon)) \) denote the \( i \)th intrinsic volume. The main result of this note says that
\[
\lim_{\varepsilon \to +0} V_i(M(\varepsilon)) = \chi(Z) V_i(B)
\]
where \( \chi(Z) \) denotes the Euler characteristic of a fiber of \( \pi \).

MSC:
- 53-XX Differential geometry
- 58-XX Global analysis, analysis on manifolds

Full Text: DOI

References:


This reference list is based on information provided by the publisher or from digital mathematics libraries. Its items are heuristically matched to zbMATH identifiers and may contain data conversion errors. It attempts to reflect the references listed in the original paper as accurately as possible without claiming the completeness or perfect precision of the matching.