

Index gerbe and differential K-theory

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Abstract:

We discuss results on determinant line bundles of Bismut-Freed, Quillen and Witten, the notion of index gerbe due to Carey-Mickelsson-Murray and Lott, and the recent index theorem of Freed-Lott in differential K-theory. Then we show, by calculations in differential K-theory, that for a family of Riemannian manifolds of odd dimensions, the index in the odd differential K-group maps to the Deligne cohomology class of the index gerbe. This is a joint work with V. Mathai.