

A Riemann-Roch type Theorem for Borel-Moore Functors

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Abstract

A Borel-Moore homology theory H comes with an associated pull-back structure, so it is natural to ask a Riemann-Roch type of question. Namely, given a morphism $\phi : H \rightarrow \tilde{H}$ between two such theories, under what conditions will ϕ commute with the pull-back maps? More precisely, the question asks what is the equivalent of the multiplication by a todd class for Borel-Moore functors.

We give a partial answer to this question, using a bivariant theory that constructs for a given Borel-Moore functor an associated algebraic oriented theory on smooth pairs.