



Mathematics > Differential Geometry

Equivariant holonomy for bundles and abelian gerbes

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This paper generalizes Bismut's equivariant Chern character to the setting of abelian gerbes. In particular, associated to an abelian gerbe with connection, an equivariantly closed differential form is constructed on the space of maps of a torus into the manifold. These constructions are made explicit using a new local version of the higher Hochschild complex, resulting in differential forms given by iterated integrals. Connections to two dimensional topological field theories are indicated. Similarly, this local higher Hochschild complex is used to calculate the 2-holonomy of an abelian gerbe along any closed oriented surface, as well as the derivative of 2-holonomy, which in the case of a torus fits into a sequence of higher holonomies and their differentials.

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