

Equivariant Differential Cohomology

Dissertation, 2015

Andreas Kübel

The construction of characteristic classes via the curvature form of a connection is one motivation for the refinement of integral cohomology by de Rham cocycles – known as differential cohomology. We will discuss the analog in the case of a group action on the manifold: We will show the compatibility of the equivariant characteristic class in integral Borel cohomology with the equivariant characteristic form in the Cartan model. Motivated by this understanding of characteristic forms, we define equivariant differential cohomology as a refinement of equivariant integral cohomology by Cartan cocycles.