Characteristic classes of Q-bundles

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Q-manifold is a super manifold together with an odd homological vector field. Q-bundle is a locally trivial fiber bundle in the category of Q-manifolds. We consider Q-bundles with an additional Z-grading, compatible with the super structure. To each cohomology class of a certain complex of forms on the fiber and a homotopy class of gauge fields we associate a cohomology class of the base (the complex of forms is a generalization of what is usually called "basic forms" and gauge fields are sections in the category of graded manifolds). This construction contains the Chern-Weil formalism as a particular example. It is also related to the BRST model of equivariant cohomology and Lecompte?s characteristic classes of an exact sequence of Lie algebras.