

Comparison Formula of Equivariant Analytic Torsion Forms

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In this talk, I will present some of our recent progress on analytic torsion forms during my doctoral studies under the supervision of X.Ma. The analytic torsion forms, which is associated to a holomorphic vector bundle on the total space of a Kähler fibration, is introduced by J.-M.Bismut and K.Köhler. Later it was generalized by X.Ma to the equivariant case. In our work, we will establish a comparison formula between two natural versions of equivariant analytic torsion forms, so that we could study the behavior of the equivariant analytic torsion forms as functions on the Lie group G . This work is a generalization of J.-M.Bismut and S.Goette's formula on equivariant Quillen metrics, and is also deeply related to B.Liu and X.Ma's recent work on η -invariants.