

abstract

IAS/PRINCETON COMPLEX GEOMETRY

Topic:

Speaker:

Affiliation:

Date:

Time/Room:

We study spectral invariants of torsion type on Calabi-Yau manifolds of dimension three. We define a new holomorphic invariant modifying the so-called BCOV torsion and explore its applications in the study of moduli space of Calabi-Yau manifolds. Using both analytical and algebraic tools, we determine the asymptotic behavior of the new invariant near a singular Calabi-Yau variety, especially for a Calabi-Yau variety with only one ODP singularity, which leads to a current curvature formula. As an application, We verify a conjecture of Beshadsky-Ceccotti-Ooguri-Vafa. In many examples, we link our metric invariant to automorphic forms. This is a recent joint work with Z. Lu and K.-I. Yoshikawa.