

BOSTON UNIVERSITY GEOMETRY SEMINAR

Analytic torsion for Z_2 -graded complexes

Mathai Varghese
(Univ. of Adelaide)

Monday, May 24, 5-6 pm in MCS 149
Tea 4:45-5 in MCS 153

Abstract: I will define and discuss the properties of the analytic torsion of Z_2 -graded elliptic complexes as an element in the graded determinant line of the cohomology of the complex, generalizing most of the variants of Ray-Singer analytic torsion in the literature. It applies to a myriad of new examples, including flat superconnection complexes, twisted analytic and twisted holomorphic torsions, etc. The definition uses pseudo-differential operators and residue traces. Time permitting, I will also give a couple of applications of this generalized torsion to mathematical physics. This is joint work with Siye Wu.