Zeta-determinants of Sturm-Liouville operators with quadratic potentials at infinity

Matthias Lesch
Universitat Bonn

26 October, 14:00-15:00

This is a report on a recent paper with Luiz Hartmann and Boris Vertman. We consider SturmLiouville operators on a half line, with potentials that are growing at most quadratically at infinity. Such operators arise naturally in the analysis of hyperbolic manifolds, or more generally manifolds with cusps. We establish existence and a formula for the associated zeta-determinant in terms of the Wroński-determinant of a fundamental system of solutions adapted to the boundary conditions. Despite being the natural objects in the context of hyperbolic geometry, spectral geometry of such operators has only recently been studied in the context of analytic torsion.