Workshop on Submanifold Theory and Geometric Analysis

UFSCar, São Carlos, Brazil, August 05 – 09, 2019

Tuesday- 10:30h - 11:20h -Auditório do DM

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Resolvent Trace Asymptotics on Stratified Spaces

Abstract. Let (M, g) be a compact smoothly stratified pseudomanifold with an iterated cone-edge metric satisfying a spectral Witt condition. Under these assumptions the Hodge-Laplacian Δ is essentially self-adjoint. We establish the asymptotic expansion for the resolvent trace of Δ. Our method proceeds by induction on the depth and applies in principle to a larger class of second-order differential operators of regular-singular type, e.g. Dirac Laplacians. Our arguments are functional analytic, do not rely on microlocal techniques and are very explicit. The results of this paper provide a basis for studying index theory and spectral invariants in the setting of smoothly stratified spaces and in particular allow for the definition of zeta-determinants and analytic torsion in this general setup. This is a joint work with Luiz Hartmann (UFSCar) and Matthias Lesch (Universität Bonn).

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