Colloquium of the SFB 647

PROGRAM:

16:00 - 17:00   General Meeting of the SFB members

17:00 - 17:30   Coffee Break

17:30 - 18:30   **Dr. Jörn Müller**

A Hodge-type Theorem for Manifold with fibred cusp metric
Manifolds with fibration structure on the boundary arise frequently in interesting problems in geometry and mathematical physics, e.g. in adiabatic limit methods and as Hawking's gravitational instantons. Of particular interest are manifolds with fibred cusp metrics; these can be considered as a geometrical generalization of locally symmetric spaces of Q-rank one at infinity.

We discuss a Hodge-type theorem for this class of Riemannian manifolds, i.e. we find harmonic representatives of the de Rham cohomology. Similar to the situation of locally symmetric spaces, these representatives are computed as special values or residues of generalized eigenforms of the Hodge-Laplace operator.

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