



SFB-Seminar

ZEIT:

13.10.2008, 15:00 Uhr - 18:00 Uhr

ORT:

Konrad-Zuse-Zentrum für Informationstechnik Berlin
Takustrasse 7
14195 Berlin-Dahlem

PROGRAMM:

15:00 - 16:00 **Dr. Cheikh Birahim Ndiaye (SISSA, Triest)**

A fourth-order uniformisation theorem for manifolds with boundary

In this talk, we will discuss the problem of finding conformal metrics with constant Q -curvature on a given compact four dimensional Riemannian manifold (M, g) with boundary. This will be equivalent to solving a fourth order nonlinear elliptic boundary value problem (BVP) with boundary condition given by a third-order pseudodifferential operator, and homogeneous Neumann conditions which has a variational structure. However when some conformally invariant quantity associated to the problem is large, the Euler-Lagrange functional associated is unbounded from below, implying that we have to find critical points of saddle type. We will show how the search of saddle points leads naturally to consider a new barycentric set of the manifold.

16:00 - 16:30 Kaffeepause

16:30 - 17:30 **Dr. Mark McLean (Zurich)**

Symplectically Exotic Smooth Affine Varieties

Any smooth affine variety has a symplectic form obtained by pulling back
the standard symplectic form $dx_i \wedge dy_i$ via its embedding into \mathbb{C}^n .

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In each complex dimension greater than two, I will construct infinitely many smooth affine varieties diffeomorphic to Euclidean space which are pairwise distinct as symplectic manifolds. I will use a tool called the Kaliman modification to construct these varieties and a homology theory called symplectic homology to distinguish them.

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