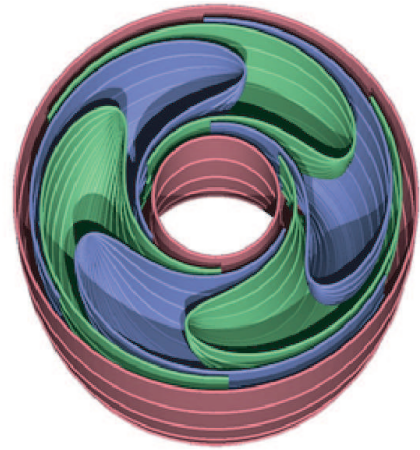


Oberseminar Geometrie
Department of Mathematics
University of Fribourg
Seminar room, Lanza dependence
Wednesday February 29, 2011, 10:20-12:00



Muriel Heistercamp (Neuchâtel)

Counting closed Reeb-orbits in spherizations

Let M be a smooth closed manifold and T^*M its cotangent bundle endowed with the usual symplectic structure $\Omega = d\alpha$, where α is the Liouville form. A hypersurface $\Sigma \subset T^*M$ is said to be *fiberwise starshaped* if for each point $q \in M$ the intersection $\Sigma_q := \Sigma \cap T_q^*M$ of Σ with the fiber at q is the smooth boundary of a domain in T_q^*M which is starshaped with respect to the origin $0_q \in T_q^*M$.

In the first part of the talk I will give lower bounds on the growth rate of the number of closed Reeb orbits on a *fiberwise starshaped hypersurface* in terms of the topology of the free loop space of M . I distinguish the two cases that the fundamental group of the base space M has an exponential growth of conjugacy classes or not. In the second part I will explain the main tools used in the proof: Floer homology of cotangent bundles and the isomorphism between the Floer homology and the singular homology of the free loop space of M .