



istanbul matematiksel bilimler merkezi
istanbul center for mathematical sciences

GEOMETRY - TOPOLOGY WORKSHOP:

June 3, 2015

10:30 Bahar Acu (University of Southern California)

Symplectic Mapping Class Group Relations Generalizing the Chain Relation

In this talk, we will examine symplectomorphisms of higher dimensional symplectic manifolds by using fibered Dehn twists first introduced by Biran and Giroux. The Weinstein domain of interest in this talk is $W^{2n} = \{f(z_0, \dots, z_n) = \delta\} \cap B^{2n+2}$, given by a homogeneous polynomial f , which has a Boothby-Wang type boundary. Despite the fact that many fibered Dehn twists cannot be expressed as a product of Dehn twists, we are still able to show that ∂W has an open book decomposition carrying a fibered Dehn twist which is symplectically isotopic to a product of $k(k-1)^n$ right-handed Dehn twists along Lagrangian spheres. Moreover, we show that this identification yields a generalization of the classical chain relation on surfaces. This is joint work with Russell Avdek.

13:00 Kyle Larson (University of Texas at Austin)

Surgery on tori in the 4-sphere

I will introduce the operation of torus surgery in the 4-sphere, and describe some recent results concerning which 4-manifolds can be produced in this way and the uniqueness of such description. As motivation I will discuss analogous results and problems about Dehn surgery on knots in the 3-sphere. If time permits I will discuss some applications to embedding 3-manifolds into 4-manifolds.

Place : IMBM Seminar Room, Boğaziçi University South Campus