Middle East Technical University
Department of Mathematics

GEOMETRY/TOPOLOGY WORKSHOP

26 March 2016

Abstracts:

Barış Coşkunüzer (Koç University)

The Plateau Problem and its generalizations

In this talk, I will give a short survey on the solution of Plateau problem, and its generalizations. Then, if the time permits, I will talk about the embeddedness of the solutions to the H-Plateau Problem.

Burak Ozbagci (Koç University)

Generalized plumbings and Murasugi sums

We propose a generalization of the classical notions of plumbing and Murasugi summing operations to smooth manifolds of arbitrary dimensions, so that in this general context Gabais credo Murasugi sum is a natural geometric operation holds. In particular, we prove that the sum of the pages of two open books is again a page of an open book. (This is a joint work with Patrick Popescu-Pampu).

Mustafa Korkmaz (METU)

Small genus-2 Lefschetz fibrations and exotic four manifolds

In my joint work with Inanc Baykur, by finding a shortest factorization of the identity as right Dehn twists in the mapping class group of genus two surface, we have constructed genus two Lefschetz fibrations whose total spaces are exotic copies of small complex rational surfaces. I will discuss proofs of our results.

Mohan Bhupal (METU)

Roots of reducible mapping classes

Results of Bonatti and Paris show that a pseudo-Anosov element of a mapping class group of a surface with nonempty boundary can have at most one m-root and that an arbitrary element of a mapping class group of surfaces of genus 1 with nonempty boundary can have at most one m-root up to conjugation. In this talk, I will discuss the situation regarding reducible elements of mapping class groups with a view to computing the mondromy of Milnor open books.