

On Fukaya category of surfaces

Haniya Azam, Lahore University of Management Sciences

Introduced by Fukaya in his work on Morse theory, A -infinity categories and Floer homology, the Fukaya category constitutes one side of the homological mirror symmetry conjecture of Kontsevich. In this talk, I will present a topological variant of Floer homology and the Fukaya category of a Riemann surface of genus greater than one. Here we introduce an admissibility condition borrowed from Heegard Floer theory which ensures invariance under isotopy and finiteness. In this setup we will compute the Grothendieck group of the derived Fukaya category. If time permits, I will also discuss the induced action of the Mapping class group on the Fukaya category.

This talk is based on joint work with Christian Blanchet.