



Seminar Title

“Topological Fukaya category of surfaces”

Speaker: Dr. Haniya Azam (LUMS)



Date/Time: Monday May 16, 2022

4:00 PM -5:00 PM

Abstract

In 1994, Maxim Kontsevich posed the Homological Mirror Symmetry (HMS) conjecture at the ICM in Zurich. HMS is a homological version (meaning equivalence at the level of categories) of the phenomenon of Mirror Symmetry (MS) observed by Physicists studying string theory. MS serves as an unexpected bridge between the complex geometry of one manifold X and the symplectic geometry of its mirror manifold X^V . Fukaya categories, constructed in the works of Kenji Fukaya and collaborators, are fairly complicated entities which constitute the A-side (or the symplectic side) of the HMS conjecture.

This talk will be a down to earth introduction to the Fukaya category of a surface of genus greater than 2. Part of this talk is based on joint work with Christian Blanchet, which is an attempt to give an intrinsic topological model for the Fukaya category of a Riemann surface disregarding the area form (and hence the symplectic structure) on the surface.