

Department of Mathematics, BGU

AGNT

On Wednesday, February ,28 2024

At 14:10 – 15:00

In 101-

Jay Swar (University of Hafia)

will talk about

Symplectic Geometry, Knot Invariants, and Selmer Spaces

Abstract: An effective approach to the Diophantine problem of enumerating all points on curves with non-abelian fundamental groups, such as those of genus greater than 1 is provided (conjecturally always) by the Chabauty-Kim method. The central object in this method is a Selmer scheme associated to the initial curve of interest and generalizing the association of Selmer groups to elliptic curves. In this talk, we'll show that arithmetic dualities produce (derived) symplectic and Lagrangian structures on associated spaces which reflect certain expectations coming from "arithmetic topology". In addition to some Diophantine utility, this should be viewed as foundational towards a "TQFT" approach to L-functions and related invariants analogous to a parallel story producing knot invariants from structures on character varieties which will be elaborated upon.