

ENUMERATIVE GEOMETRY SEMINAR

Speaker: Hu Zhao
Zhejiang University

Time: Wed. Oct. 29th, 14:00 - 16:00

Venue: SCMS Room 446-448

Double Poisson Structures and Noncommutative Poisson Extensions

Abstract: Due to the central role of quiver varieties in mathematical physics and geometric representation theory, preprojective algebras have emerged as one of the most prominent noncommutative spaces. A direct consequence of noncommutative Hamiltonian reduction is that the quotient space $\Pi Q / [\Pi Q, \Pi Q]$ carries a Lie bracket, and the image of the trace map endows the coordinate ring of the quiver variety with a Poisson algebra structure. In this talk, we introduce noncommutative Poisson extension theory and demonstrate that the Lie bracket extends to the entire reduced cyclic homology. We further show that shifted double Poisson structures are well-behaved in the derived setting. Under the Kontsevich-Rosenberg principle, we discuss the relationship between shifted double Poisson structures and shifted Poisson structures on the derived moduli stack of representations.

