HONGDI HUANG, Rice University
Weighted Poisson projective planes

In this talk, we will discuss graded unimodular Poisson structures on a weighted polynomial algebra $A = \Bbbk[x, y, z]$ defined by weighted homogeneous potentials Ω of degree being the sum of weights on x, y, z. These graded Poisson algebras correspond to weighted Poisson projective planes. Using Poisson valuations, we characterize the Poisson automorphism groups for A and $A/(\Omega - \xi)$ when the irreducible Ω has an isolated singularity and $\xi \in \Bbbk$. Besides, we will talk about the (co)homological invariant of these unimodular Poisson algebras determined by irreducible potentials.