1162-16-61 Jason Gaddis, Padmini Veerapen and Xingting Wang* (xingting.wang@howard.edu).

Reflection groups and rigidity of quadratic Poisson algebras.

In this talk, we discuss the invariant theory of quadratic Poisson algebras. Let $G$ be a finite group of the graded Poisson automorphisms of a quadratic Poisson algebra $A$. When the Poisson bracket of $A$ is skew-symmetric, a Poisson version of the Shephard-Todd-Chevalley theorem is proved stating that the fixed Poisson subring $A^G$ is skew-symmetric if and only if $G$ is generated by reflections. For many other well-known families of quadratic Poisson algebras, we show that $G$ contains limited or even no reflections. This kind of Poisson rigidity result ensures that the corresponding fixed Poisson subring $A^G$ is not isomorphic to $A$ as Poisson algebras unless $G$ is trivial. This is a joint work with Jason Gaddis and Padmini Veerapen. (Received August 22, 2020)