

Northeastern University



Mathematics Department

Geometry, Physics, and Representation Theory Seminar

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Thursday, February 27, 2:50-3:50 pm, Lake Hall 511

Action-angle coordinates on multiplicity-free spaces

Abstract

Action-angle coordinates are a type of coordinate chart on symplectic manifolds originating from the theory of commutative completely integrable systems. Symplectic toric manifolds are the prototypical example of symplectic manifolds with global action-angle coordinates. Multiplicity-free spaces are the natural non-abelian generalization of toric manifolds. For example, coadjoint orbits of compact Lie groups are multiplicity-free spaces. Unlike toric manifolds, multiplicity-free spaces do not come with natural global action-angle coordinates.

In this talk I will present recent work that constructs action-angle coordinates on "big subsets" of a large family of multiplicity-free spaces. As a corollary, we close a conjecture on the Gromov width of coadjoint orbits in the case of arbitrary regular coadjoint orbits of compact simple Lie groups.

This talk is based on collaboration with Anton Alekseev, Benjamin Hoffman, and Yan-peng Li.