

Speaker: Sam Evens
University of Notre Dame

Friday, September 7, 2013

3:30 pm

Room: 258 Hurley Hall

Title: Eigenvalue coincidences and orbits on the flag variety

Abstract:

This talk is based on joint work with Mark Colarusso which relates the Gelfand-Zeitlin integrable system to orbits of $K = GL(n-1) \times GL(1)$ on the variety of all flags in a n -dimensional complex vector space. For $x \in gl(n)$, let x_{n-1} be its upper left hand $(n-1)$ by $(n-1)$ corner. We consider the variety $X_k \in gl(n)$ consisting of matrices x with the property that x and x_{n-1} share at least $n-1$ generalized eigenvalues, counting multiplicity. We show that X_k is a union of irreducible components coming from K -orbits on the flag variety whose dimension exceeds the dimension of a closed K -orbit by $n-k-1$. We discuss an application, which allows us to show the quotient $X//K$ is an affine space.