



Speaker: Tsao-Hsien Chen
University of Chicago

Thursday, March 23, 2017

2:00 PM

258 Hurley Hall

Title: Hyperelliptic Curves and Springer Theory

Abstract:

Springer theory relates nilpotent orbits in the Lie algebra of a connected reductive group to irreducible representations of the Weyl group. It is a classical piece of representation theory on which much other theory is built. I will consider a generalization of Springer theory where we replace Lie algebras by symmetric spaces. In this new setting various new phenomena occur which are not present in the classical Springer theory. For example, we obtain representations of the braid group on cohomology of families of varieties rather than just Weyl group representations. Interestingly, varieties appearing in this new setting are closely related to hyperelliptic curves. This talk is based on a joint project with Kari Vilonen and Ting Xue.