THE UNIVERSITY  OF HONG KONG

Institute of Mathematical Research
Department of Mathematics

GEOMETRY SEMINAR

Homological rigidity of smooth Schubert varieties of a rational homogeneous manifold of Picard number one

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Abstract

A Schubert variety of a rational homogeneous manifold G/P is the closure of an orbit of a Borel subgroup of G. As is well-known, the integral homology groups $H_*(G/P, \mathbb{Z})$ are generated by classes represented by Schubert varieties. We examine homological rigidity on G/P, i.e., the question whether a given effective integral homology class is necessarily represented by a sum of Schubert varities. Especially, a Schubert variety X is said to be Schur rigid if any irreducible subvariety of G/P whose homology class is a multiple of the homology class of X is gX for some g in G. In this talk we prove that a non-linear smooth Schubert variety of a rational homogeneous manifold of Picard number one is Schur rigid.

Date: November 18, 2010 (Thursday)

Time: 3:00 – 4:00pm

Place: Room 210, Run Run Shaw Bldg., HKU

All are welcome