Institute of Mathematical Research
HKU

Department of Mathematics
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Hong Kong Geometry Colloquium

November 30, 2013 (Saturday)

Room 210, Run Run Shaw Bldg., HKU

Professor Anatoly Libgober

University of Illinois at Chicago, USA

Mordell Weil groups of isotrivial abelian varieties over function fields and topology of plane singualr curves

10:00 – 11:00am

Abstract

Mordell Weil ranks of isotrivial abelian varieties over filed $\mathbf{C}(x, y)$ are closely related to fundamental group of the complement to the discriminant. The key is the simple structure of Albanese varieties of cyclic covers of the plane ramified along the discriminant provided certain conditions are met. I will discuss explicit examples of calculations of Mordell Weil ranks based on these results and open problems.

11:00 – 11:20am *Tea Break*

Professor Alan Huckleberry

Jacobs University, Bremen, Germany

Automorphism groups of flag domains

11:20am – 12:20pm

Abstract

Flag domains D are open orbits of real semisimple Lie groups G_0 in compact flag manifolds $Z = G/P$ of their complexification. Such domains arise in various ways in complex geometry, e.g., in moduli problems, and they are important for the G_0-representation theory. In the lecture we will show that, except in the special case where D is the product of a Hermitian symmetric space and a positive-dimensional compact complex manifold, its group Aut(D) of holomorphic automorphisms is a Lie group. An outline of the proof of this fact, as well as a concrete description of the connected component at the identity of Aut(D) (It is almost always just G_0!), will be given in the lecture. The main tool for the proof, the Kobayashi hyperbolicity of associated cycle spaces, will be discussed in detail.

This meeting is hosted by the Institute of Mathematical Research, HKU.

All are Welcome