Institute of Mathematical Research
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Hong Kong Geometry Colloquium
November 24, 2018 (Saturday)
Room 210, Run Run Shaw Bldg., HKU

Professor Mark G. Lawrence

Nazarbayev University, Republic of Kazakhstan

Hulls of totally real tori in $S^1 \times \mathbf{C}$, knots and holomorphic motions

10:00 – 11:00am

If $K \subseteq \mathbf{C^n}$ is a compact subset, there is in general no hope of finding analytic structure in the polynomial hull $\widehat{K} \setminus K$. Even for sets which are quite smooth, there are difficulties. In this talk, some theorems about analytic structure in the polynomial hull of a totally real torus in $S^1 \times \mathbf{C}$ will be discussed. A recent result of the speaker and Duval shows analyticity in the hull of tori with a square root winding. For some tori where topological considerations rule out analytic structure in the hull, it is shown that the hull over the open disc is empty. Connections with knot theory (torus knots, quasipositivity) and holomorphic motions ala Slodkowski will be explained.

11:00 – 11:20am	*Tea Break*

Professor Rong Du

East China Normal University

Chern classes inequalities on nonsingular projective n-folds

11:20am – 12:20pm

Let X be a nonsingular projective n-fold ($n > 1$) of general type with ample canonical bundle or Fano projective manifold over an algebraic closed field of any characteristic. We will introduce a new method to get a bunch of inequalities in terms of Chern classes by Schubert calculus in the Chow group of Grassmannian under Gauss map. Then we will give an affirmative answer to a generalized open question posted by Hunt on geography problem on nonsingular projective manifolds to all dimensions. This is a joint work with Hao Sun.

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

All are Welcome