



*Institute of Mathematical Research
Department of Mathematics*

GEOMETRY SEMINAR

**June 24, 2013 (Monday)
Room 210, Run Run Shaw Bldg., HKU**

Dr. Mario Tsz On Chan

Korea Institute for Advanced Study, Korea, Seoul

The Index Theorem for Quasi-Tori

3:00 – 4:00pm

Abstract

The Index Theorem for holomorphic line bundles on complex tori asserts that some cohomology groups of a line bundle vanish according to the signature of the associated hermitian form. In this article, this theorem is generalized to quasi-tori, i.e. connected complex abelian Lie groups which are not necessarily compact. In view of the Remmert-Morimoto decomposition of quasi-tori as well as the Künneth formula, it suffices to consider only Cousin-quasi-tori, i.e. quasi-tori which have no non-constant holomorphic functions. The Index Theorem is generalized to holomorphic line bundles, both linearizable and non-linearizable, on Cousin-quasi-tori using L^2 -methods coupled with the Kazama-Dolbeault isomorphism and Bochner-Kodaira formulas.

4:00 – 4:15 Tea break

Dr. Yun Gao

Shanghai Jiaotong University

Canonical maps of surfaces defined by Abelian covers

4:15 – 5:15pm

Abstract

We classify the surfaces whose canonical maps are abelian covers over the projective plane by using abelian covering. Moreover, we give defining equations for Campedelli surface, Persson's surface and Tan's surfaces with odd canonical degrees explicitly. It is a joint work with Rong Du.

All are Welcome