Department of Mathematics
The Chinese University of Hong Kong

數學系
香港中文大學

Hong Kong Geometry Colloquium

Date: 31 January 2004 (Saturday)
Venue: LT1, Lady Shaw Building,
The Chinese University of Hong Kong

Time: **10:00a.m. - 11:00a.m.**

Speaker: **Professor Xin Yuanlong**
              Institute of Mathematics, Fudan University

Title: **Vanishing Theorems for L^2-Cohomology**

Abstract: Various L^2-vanishing theorems for nonpositively curved manifolds can be obtained. Among them are that of sectional curvature pinching, that of sectional-Ricci curvature pinching. Our method also can cover the classifying spaces for variation of Hodge structure which carry both positive and negative curvature.

Tea Break

Time: **11:30a.m. - 12:30p.m.**

Speaker: **Professor Chen Zhijie**
              Department of Mathematics, East China Normal University

Title: **On the Horikawa numbers of a genus 3 fibration**

Abstract: Let $f: S \to C$ be a relatively minimal non-hyperelliptic fibration of genus 3, F a fiber of f, and $p = f(F)$. Then the Horikawa number of F is defined as (M.Reid)

$$H_F = \text{length coker } (S^2 f_* \omega_{S/C} \hookrightarrow f_*(\omega_{S/C}^{\otimes 2}))_p.$$

The global invariants of f depend on this number. In fact, M. Reid shows that

$$K_f^2 - 3\chi_f = \sum_F H_F.$$

But it is not clear how to calculate Horikawa numbers. By using the triple cover theory, we found an explicit formula to compute the Horikawa number of a fiber. The formula is closely related to the canonical resolution of singularities on the branch locus of the triple cover.

~ All are Welcome ~

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