Department of Mathematics
The Chinese University of Hong Kong

數學系
香港中文大學

Phone: (852) 2609 7988-9 Fax: (852) 2603 5154 Email: dept@math.cuhk.edu.hk
Rm. 220, Lady Shaw Building, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong

Hong Kong Geometry Colloquium

Saturday, 25 May 2002
LT2, Lady Shaw building
The Chinese University of Hong Kong

Time: *10:00 a.m. – 11:00 a.m.*
Title: *Heat kernel, symplectic geometry, moduli spaces and finite groups*
Speaker: *Professor Liu Kefen*
UCLA, U.S.A.

Abstract: I will use heat kernel as a unified tool to derive the nonabelian localization formula in symplectic geometry, prove some striking formulas of Witten about intersection numbers of moduli spaces of flat connections, and get some formulas for counting number of solutions of equations in finite groups.

Time: *11:30 a.m. – 12:30 p.m.*
Title: *Faltings height and derivative of an Eisenstein series*
Speaker: *Professor Yang Tong-Hai*
University of Wisconsin, USA

Abstract: In this talk, we will describe a joint work with S. Kudla and M. Rapoport and some related background. Let B be an indefinite quaternion algebra, associated to it is a (family of) Shimura curves (i.e., B = the matrix algebra, they are the modular curves). For every integer $m > 0$, one associate naturally a cycle of codimension one – the Heegner cycle. Its generating function is (almost) a modular form of weight 3/2 by a recent theorem of Borcherds. It turns out that the Shimura curve has an integral model and one can talk about arithmetic Chow cycles for every integer m (can be negative). Its generating function should be a modular form valued at the arithmetic Chow group. We proved that its intersection with the metrized Hodge bundle on the Shimura curve is a modular form (up to a constant) and is indeed the derivative of some explicit Eisenstein series. In the first part of the talk, I will recall a natural way to construct cycles on a family of Shimura varieties. Then I will restrict to the special case we are interested in.

All Are Welcome!