



The Hong Kong University of Science and Technology

Department of Mathematics

Hong Kong Geometry Colloquium

Frobenius split type of moduli spaces of parabolic bundles

By

Prof. Xiaotao Sun

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Abstract

A variety over a field of characteristic zero is called of Frobenius split type if there is a dense set of primes p such that its modulo p reduction is Frobenius split. A nice vanishing theorem of cohomology holds for such kind of varieties. In this talk, I will show that moduli spaces of parabolic bundles over a curve is of Frobenius split type.

Date : Saturday, 11 October 2014

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

***Venue : Room 4502, Academic Building
(near Lifts 25 & 26), HKUST***

**Higgs-de Rham flow in the non-abelian p -adic Hodge theory and
a p -adic analogue of the uniformization theory of
a hyperbolic Riemann surface**

By

Prof. Kang Zuo

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Abstract

The notion "Higgs-de Rham flow" over a smooth logarithmic scheme $X/W(k)$ over the ring of Witt vectors of finite field k of characteristic p introduced in a recent paper by Lan-Sheng-Zuo has found some interesting applications in arithmetic geometry. Higgs-de Rham flow induces a correspondence between a subcategory of semistable graded Higgs bundles with $c_1=0$ and crystalline representations of the algebraic fundamental group of the generic fibre of X , a p -adic analogue of the well known correspondence between polystable graded Higgs bundles of $c_1=0$ and polarized complex variation of Hodge structures. In my lecture I shall talk about application of Higgs-de Rham flow on uniformization of hyperbolic p -adic curves, which is closely related to S. Mochizuki's p -adic Teichmüller theory. This is a joint work with Lan-Sheng-Yang.

Date : Saturday, 11 October 2014

Time : 11:20a.m.-12:20a.m.

***Venue : Room 4502, Academic Building
(near Lifts 25 & 26), HKUST***

All are welcome !

Light refreshment will be provided at Room 3493 from 11:00 am to 11:20 am