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 Teichmueller thoery. 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