

*Department of Mathematics,
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Math 209 - Number Theory

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A Riemann-Hilbert Correspondence in Characteristic p

Abstract:

Let k be a perfect field of characteristic p , and let $\text{Gal}(k)$ denote the absolute Galois group of k . By a classical result of Katz, the category of finite-dimensional F_p -vector spaces with an action of $\text{Gal}(k)$ is equivalent to the category of finite-dimensional vector spaces over k with a Frobenius-semilinear automorphism. In this talk, I'll discuss some joint work with Bhargav Bhatt which generalizes Katz's result, replacing the field k by an arbitrary F_p -scheme X . In this case, there is a correspondence relating p -torsion étale sheaves on X to quasi-coherent sheaves on X equipped with a Frobenius-semilinear automorphism, which can be viewed as a "mod p " version of the Riemann-Hilbert correspondence for complex algebraic varieties.

Special Note:

There will be a pre-talk for graduate students and postdocs 1:20-1:50 in the seminar room.

Cristian Popescu

Thursday, December 6, 2018

2:00 PM

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