

MIT Department of Mathematics Number Theory Seminar

MIXED POLYNOMIALS OF CHARACTER VARIETIES

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Abstract: Let X be a smooth projective algebraic curve over \mathbb{C} . In this talk I will discuss recent work with Hausel and Letellier on the geometry of the moduli space M_B of representations of $\pi_1(X)$ to $G = GL_n(\mathbb{C})$ and that of an associated quiver variety. The space M_B is the Betti realization of $H^1(X, G)$ in non-abelian Hodge theory. Other realizations are: Dolbeault, the moduli space of semistable Higgs G -bundles on X and de Rham: the moduli space of flat G -connections on X . I will explain how counting points of M_B over a finite field k , using a combination of techniques from combinatorics and the representation theory of $GL_n(k)$, connects to Macdonald polynomials, which, in turn, suggests a natural conjectural form for the mixed Hodge polynomial of M_B .

THURSDAY, October 4

4:00 p.m.
Room 2-143