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Thursday 9th April 10 am to 11am

Speaker: Devadatta Ganesh Hegde

Title: Rethinking Langlands' 1964 Work on Eisenstein Series

Abstract:

Langlands' 1964 work on Eisenstein series on reductive groups, though foundational to the Langlands program, remains largely misunderstood.

We report on a clean structural formula for the poles of Eisenstein series induced from the trivial representation on a Levi subgroup. This formula suggests natural generalization to Eisenstein series induced from the discrete spectrum of the Levi, and the proof technique forces a rethinking of Langlands' approach. We will explain the formula and — time permitting — its generalization to the discrete spectrum and the outlines of this rethinking.

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Thursday 9th April 2pm to 3pm

Speaker: Ulrich Derental

Title: Rational points of bounded height on the chordal cubic fourfold

Abstract: Cubic hypersurfaces over the rational numbers often contain infinitely many rational points. In this situation, the asymptotic behavior of the number of rational points of bounded height is predicted by conjectures of Manin and Peyre. After reviewing previous results, we discuss the chordal cubic fourfold, which is the secant variety of the Veronese surface. Since it is isomorphic to the symmetric square of the projective plane, a result of W. M. Schmidt for quadratic points on the projective plane can be applied. We prove that this is compatible with the conjectures of Manin and Peyre once a thin subset with exceptionally many rational points is excluded from the count.

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Thursday 9th April 3.15pm to 4.15pm

Speaker: Finn Bartsch

Title: Weakly special varieties and Campana points

Abstract: The "Weakly Special Conjecture" tries to geometrically characterize those varieties which have a potentially dense set of rational points. Given a variety X over a number field such that no finite étale cover of X dominates a variety of general type, it predicts that the rational points on X should be dense, perhaps after passing to some finite field extension. In this talk, I explain how Campana's framework of "C-pairs" and "special varieties" conjecturally provides additional obstructions to the density of rational points, and hence suggests that the Weakly Special Conjecture is overly optimistic. Time permitting, I will also explain how these obstructions can alternatively be formulated using the language of algebraic stacks. This is based on joint work with Frédéric Campana, Ariyan Javanpeykar, and Olivier Wittenberg.

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