



Berlin
Mathematical
School

BMS Days 2015

Monday 16 February 2015

BMS Loft, Urania, An der Urania 17, 10787 Berlin

11:00 G. Farkas & A. Ortega (HU Berlin)

15:30 H. Helfgott (CNRS/IMJ)

Gavril Farkas & Angela Ortega: What is an abelian variety of dimension six?

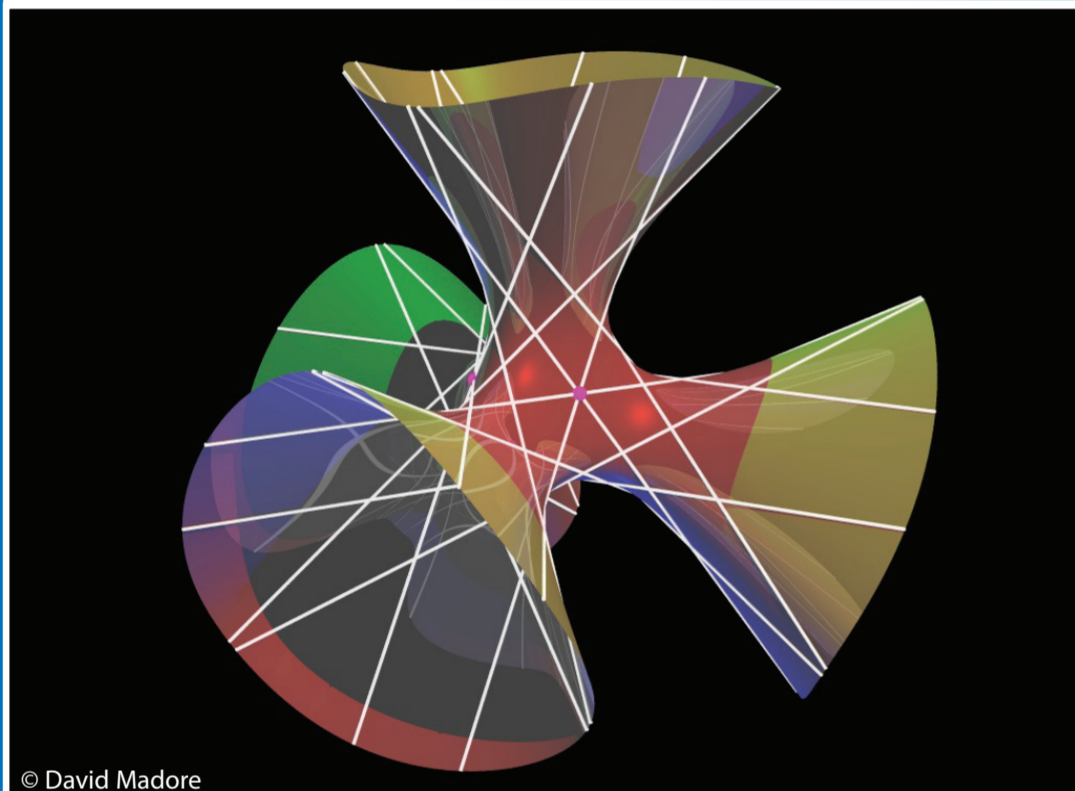
Abelian varieties are group varieties, that is, loci of points given by polynomial equations which simultaneously admit a group structure. Abelian varieties are fundamental mathematical objects playing a central role in algebraic geometry, number theory, dynamical systems or cryptography. It is known that all abelian varieties of dimension at most five are either Jacobians of algebraic curves, or Prym varieties. This allows one to reduce the study of abelian varieties of small dimension to the rich and concrete theory of curves. Farkas and Ortega will discuss recent progress on finding a structure theorem for abelian varieties of dimension six.

Angela Ortega is a researcher and Gavril Farkas a professor of mathematics at HU Berlin. Their main area of research is algebraic geometry.

Harald Helfgott: The ternary Goldbach conjecture

The ternary Goldbach conjecture (1742) asserts that every odd number greater than five can be written as the sum of three prime numbers. Following the pioneering work of Hardy and Littlewood, Vinogradov proved (1937) that every odd number larger than a constant C satisfies the conjecture. In the years since then, there has been a succession of results reducing C , but only to levels much too high for a verification by computer up to C to be possible ($C > 10^{1300}$). (Work by Ramare and Tao solved the corresponding problems for six and five prime numbers instead of three.) Helfgott's recent work proves the conjecture. In his talk, he will go over the main ideas in the proof.

Harald Andrés Helfgott is a Peruvian mathematician born in Lima. His main area of research is number theory. Helfgott is currently a senior researcher at CNRS/IMJ (Institut de mathématiques de Jussieu), Paris.



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