

Rational points on a cubic fourfold

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We establish an asymptotic formula (with power saving error term) for the number of rational points of bounded height for a certain cubic fourfold, thereby proving a strong form of Manin's conjecture for this algebraic variety by techniques of analytic number theory. The leading constant in the asymptotic formula is computed via a combinatorial graph theoretic argument, and the counting problem features ten-fold multiple Dirichlet series.