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Growth Rate of Rational Points on Non-Compact Complex Ball Quotients

Let X be a complex ball quotient by a nonuniform neat lattice in $PU(n,1)$. Using hyperbolic geometry, we provide a uniform lower bound on the volume of subvarieties of X in terms of a geometric quantity of X called systole. This has an arithmetic consequence: Suppose that the toroidal compactification of X is defined over a number field K. Then, with a mild assumption on X, the systole of X controls the growth rate of K-rational points on X.