

Equidistribution of small points on toric varieties

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Abstract:

As the culmination of work of many mathematicians, Yuan has obtained a very general equidistribution result for small points in arithmetic varieties. Roughly speaking Yuan's theorem states that given a "very" small generic sequence of points, with respect to a positive hermitian line bundle, the associated sequence of measures converges weakly to the measure associated to the hermitian line bundle. Here very small means that the height of the points converges to the lower bound of the essential minimum given by Zhang inequalities. The existence of a very small generic sequence is a strong condition on the arithmetic variety because it implies that the essential minimum attains its lower bound. We will say that a sequence is small if the height of the points converges to the essential minimum. By definition every arithmetic variety contains small generic sequences.

We show that for toric line bundles on toric varieties arithmetic Yuan's theorem can be splitted in two parts.

1. Given a small generic sequence of points, with respect to a positive hermitian line bundle, the associated sequence of measures converges weakly to a measure.
2. If the sequence is very small, the limit measure agrees with the measure associated to the hermitian line bundle.