

1154-11-1372 **Alina Bucur** (alina@math.ucsd.edu), **Francesc Fité*** (ffite@mit.edu) and **Kiran Kedlaya** (kedlaya@ucsd.edu). *Effective Sato-Tate conjecture for abelian varieties and applications.*

I will present an effective version of the Sato–Tate conjecture for an abelian variety A defined over a number field with connected Sato–Tate group that is derived from the generalized Riemann hypothesis. The ”effectivity” refers to the obtaintion of an upper bound on the error term in the count predicted by the Sato-Tate measure that only depends on certain invariants of the Lie algebra of the Sato-Tate group of A . I will discuss three applications of this conditional result: an interval variant of Linnik’s problem for an abelian variety, a sign variant of Linnik’s problem for a pair of abelian varieties, and the determination (up to multiplication by a nonzero constant) of the asymptotic number of primes whose Frobenius trace attains the integral part of the Hasse–Weil bound when A is an elliptic curve with complex multiplication. This is a joint work with Alina Bucur and Kiran Kedlaya. (Received September 15, 2019)