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Amita Malik* (amita.malik@aimath.org), San Jose, CA , and **Neha Prabhu**. *Equidistribution of αp^θ with a Chebotarev condition and applications to extremal primes*. Preliminary report.

In this talk, we discuss a joint distribution result concerning the fractional part of αp^θ for $\theta \in (0, 1)$, $\alpha > 0$, where p is a prime satisfying a Chebotarev condition in a fixed finite Galois extension over \mathbb{Q} . As an application, for a fixed non-CM elliptic curve E/\mathbb{Q} , an asymptotic formula is given for the number of primes at the extremes of the Sato-Tate measure modulo a large prime ℓ . These are precisely the primes p for which the Frobenius trace $a_p(E)$ satisfies the congruence $a_p(E) \equiv [2\sqrt{p}] \pmod{\ell}$. This is joint work with Neha Prabhu. (Received February 15, 2021)