ASIF ZAMAN, University of Toronto
Brun-Titchmarsh analogue for the Chebotarev density theorem

The classical Brun-Titchmarsh theorem provides an upper bound for the number of primes in an arithmetic progression in a far wider range than that afforded by the Prime Number Theorem for arithmetic progressions. The Chebotarev density theorem, on the other hand, has few alternatives to adequately estimate the number of prime ideals with a prescribed splitting behaviour in a Galois extension of number fields. Unfortunately, these alternatives are not sufficiently robust for many interesting applications. We will discuss the existing literature and report on a new field-uniform generalization of Brun-Titchmarsh associated to the Chebotarev density theorem. This result has consequences for counting primes represented by certain binary quadratic forms and refining unconditional bounds towards the Lang-Trotter conjectures for elliptic curves. This talk is based on joint work with Jesse Thorner.