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The Distribution of Primes in Arithmetic Progression: Averages, Least Primes and Large Gaps.

In this talk we will describe the outputs of extensive computations concerning the distribution of primes in arithmetic progressions. This includes looking at extreme values for the asymptotically normalized versions of: the error terms $\Psi(x,q,a)-x/\phi(q)$, the worst cases for the least prime in an arithmetic progression modulo q, and large gaps between primes in arithmetic progressions. In each case we are looking at an extreme value distribution with an aim of better understanding the true distributions and providing supporting evidence for related conjectures. This has been joint work with Habiba Kadiri and Reeve Wilde.