

BOSTON UNIVERSITY NUMBER THEORY SEMINAR

Unexpected biases in the distribution of consecutive primes

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Monday, November 14 at 4:15 pm
111 Cummington Mall, MCS B21
Tea and cookies in MCS 144 at 4:00 pm

Abstract: While the sequence of primes is very well distributed in the reduced residue classes $(\text{mod } q)$, the distribution of pairs of consecutive primes among the permissible pairs of reduced residue classes $(\text{mod } q)$ is surprisingly erratic. We propose a conjectural explanation for this phenomenon, based on the Hardy-Littlewood conjectures, which fits the observed data very well. We also study the distribution of the terms predicted by the conjecture, which proves to be surprisingly subtle. This is joint work with Kannan Soundararajan.