HIGH MOMENTS OF THE ESTERMANN FUNCTION

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Abstract: For a rational number h/k, the Estermann fucntion is defined as the Dirichlet series $D(s,h/k)=\sum_{n\geq 1} d(n)e^{2\pi nh/k}/n^s$ for $\Re(s)>1$ and by meromorphic continuation in the rest of the complex plane. We will show how to compute all moments of the Estermann function at the central point s=1/2 when averaging over h modulo k as k goes to infinity among primes.