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Bounds and computational results for exponential sums related to cusp forms. (English)

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The holomorphic cusp forms are defined by the Fourier series

$$F(z) = \sum_{n=1}^{\infty} a(n) n^{\frac{\kappa-1}{2}} \mathrm{e}(nz),$$

where Re $z > 0$, $\mathrm{e}(x) = \mathrm{e}^{2\pi i x}$, κ is the weight of the form, and the numbers $a(n)$ are called normalized Fourier coefficients.

This paper presents some computer data suggesting the size of bounds for exponential sums

$$\sum_{M \le n \le M+\Delta} a(n)\mathrm{e}(n\alpha),$$

where Δ is considerably smaller than M.

Reviewer: Huaning Liu (Shaanxi)

MSC:

11L07 Estimates on exponential sums
11Y35 Analytic computations

Cited in **1** Document

Keywords:

cusp forms; exponential sums; Ramanujan tau function; analytic computations

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