

Ivić, Aleksandar

On sums of Hecke series in short intervals. (English) Zbl 0994.11020
J. Théor. Nombres Bordx. 13, No. 2, 453-468 (2001).

Let $H_j(s)$ be the standard set of Hecke series associated with Maass wave forms of the full modular group with associated eigenvalues $\lambda_j = \kappa_j^2 + 1/4$. Then, with the usual notation, it is shown that

$$\sum_{K-G < \kappa_j \leq K+G} \alpha_j H_j(1/2)^3 \ll GK^{1+\varepsilon},$$

for $1 \leq G \leq K$ and any fixed $\varepsilon > 0$. As a corollary one has the new upper bound $H_j(1/2) \ll \kappa_j^{1/3+\varepsilon}$.

Reviewer: Roger Heath-Brown (Oxford)

MSC:

- 11F66** Langlands L -functions; one variable Dirichlet series and functional equations
11F37 Forms of half-integer weight; nonholomorphic modular forms

Cited in **4** Reviews
Cited in **20** Documents

Keywords:

cubic moment; short interval; Hecke series; Maass wave forms; upper bound

Full Text: [DOI](#) [EMIS](#) [Numdam](#) [EuDML](#)

References:

- [1] Conrey, J.B., Iwaniec, H., The cubic moment of central values of automorphic L-functions. *Ann. of Math. (2)* 151 (2000), 1175-1216. · [Zbl 0973.11056](#)
- [2] Graham, S.W., Kolesnik, G., Van der Corput's Method of Exponential Sums. 126, Cambridge University Press, Cambridge, 1991. · [Zbl 0713.11001](#)
- [3] Huxley, M.N., Area, Lattice Points, and Exponential Sums. *London Math. Soc. Monographs*13, Oxford University Press, Oxford, 1996. · [Zbl 0861.11002](#)
- [4] Ivić, A., The Riemann zeta-function. John Wiley and Sons, New York, 1985. · [Zbl 0556.10026](#)
- [5] Ivić, A., Motohashi, Y., On some estimates involving the binary additive divisor problem. *Quart. J. Math. (Oxford)* 46 (1995), 471-483. · [Zbl 0847.11046](#)
- [6] Iwaniec, H., Small eigenvalues of Laplacian for $\Gamma_0(N)$. *Acta Arith.*56 (1990), 65-82. · [Zbl 0702.11034](#)
- [7] Iwaniec, H., The spectral growth of automorphic L-functions. *J. Reine Angew. Math.*428 (1992), 139-159. · [Zbl 0746.11024](#)
- [8] Katok, S., Sarnak, P., Heegner points, cycles and Maass forms. *Israel J. Math.*84 (1993), 193-227. · [Zbl 0787.11016](#)
- [9] Lebedev, N.N., Special functions and their applications. Dover Publications, Inc., New York, 1972. · [Zbl 0271.33001](#)
- [10] Luo, W., Spectral mean-values of automorphic L-functions at special points. *Analytic Number Theory: Proc. of a Conference in Honor of H. Halberstam, Vol. 2* (eds. B. C. Berndt et al.), Birkhauser, Boston etc., 1996, 621-632. · [Zbl 0866.11034](#)
- [11] Motohashi, Y., Spectral mean values of Maass wave forms. *J. Number Theory*42 (1992), 258-284. · [Zbl 0759.11026](#)
- [12] Motohashi, Y., The binary additive divisor problem. *Ann. Sci. l'École Norm. Sup. 4e série* 27 (1994), 529-572. · [Zbl 0819.11038](#)
- [13] Motohashi, Y., Spectral theory of the Riemann zeta-function. Cambridge University Press, Cambridge, 1997. · [Zbl 0878.11001](#)

This reference list is based on information provided by the publisher or from digital mathematics libraries. Its items are heuristically matched to zbMATH identifiers and may contain data conversion errors. It attempts to reflect the references listed in the original paper as accurately as possible without claiming the completeness or perfect precision of the matching.