

**Ivić, A.**

**On certain sums over ordinates of zeta-zeros.** (English) Zbl 0999.11048  
Bull., Cl. Sci. Math. Nat., Sci. Math. 122, No. 26, 39-52 (2001).

For  $\operatorname{Re} s > 1$  let  $G(s)$  be the function defined by  $G(s) = \sum_{\gamma > 0} \gamma^{-s}$ , where  $\gamma$  denotes the ordinates of complex zeros of the Riemann zeta-function  $\zeta(s)$ , and for  $0 < \operatorname{Re} s \leq 1$  by analytic continuation. The main result is: For  $\sigma$  fixed we have

$$\int_1^T |G(\sigma + it)|^2 dt \ll \begin{cases} T, & 1/2 < \sigma \leq 1 \\ T \log^2 T, & \sigma = 1/2 \\ T^{2-2\sigma} \log T, & 0 < \sigma < 1/2. \end{cases}$$

Certain integrals involving the function  $S(T)$ , that is closely related to  $G(s)$ , are also considered.

For Part II, see [*A. Bondarenko* et al., Hardy-Ramanujan J. 41, 85–97 (2018; [Zbl 1447.11092](#))].

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**MSC:**

**11M06**  $\zeta(s)$  and  $L(s, \chi)$

Cited in **2** Reviews

**Keywords:**

Riemann zeta-function; Riemann hypothesis; analytic continuation

**Full Text:** [arXiv](#) [EuDML](#)