

Extreme values of the zeta function at critical points

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Littlewood and Titchmarsh between them proved that there exist arbitrarily large t for which $|\zeta(1 + it)| > (e^\gamma - \varepsilon) \log \log t$ where γ is Euler's constant, and also that if RH is true, then $|\zeta(1 + it)| < (2e^\gamma + \varepsilon) \log \log t$ for all large t . *In joint work with Gonek*, we obtain bounds of the same order of magnitude for $|\zeta(\rho_1)|$ where $\rho_1 = \beta_1 + i\gamma_1$ with $\beta_1 > 1$ and $\zeta'(\rho_1) = 0$.

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