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The eighth moment of the Riemann zeta function

In this talk I explain how the Riemann hypothesis and a conjecture for quaternary additive divisor sums implies the conjectured asymptotic for the eighth moment of the Riemann zeta function. This builds on earlier work on the sixth moment of the Riemann zeta function (Ng, Discrete Analysis, 2021). One key difference is that sharp bounds for shifted moments of the zeta function on the critical line are required. This is joint work with Quanli Shen and Peng-Jie Wong.