

The integral means spectrum for lacunary series

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Abstract

Asymptotically sharp bounds for the integral means spectrum of lacunary series are proved. In particular, we show that Rohde's estimates for lacunary series with positive coefficients are sharp and hold not only for the positive case. Moreover, a relation between the law of the iterated logarithm and the integral means spectrum is established. Using this we give a sharp version of the Makarov law of the iterated logarithm for lacunary series.
