The axiomatic pattern on the critical line

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Abstract

In this paper, we analyze the anatomy of critical line.

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1 Introduction and results

In 1914, Hardy [Har14] proved that there are infinitely many zeros of $\zeta(1/2+it)$. In this paper, we survey the critical line. Our motivation is to propose the axiomatic pattern of zeros on the critical line.

We denote R as the set of zeros on the critical line and its complement as $C(R)$. And $[x]$ denotes the integer part of x. We have the following postulate.

Postulate 1. Let M be any zero on the critical line. Then:

1. R is non-empty.
2. $|M| > 0$.
3. $[M] \in \mathbf{Z}$.
4. $M \notin C(R)$.

References

[Har14] G. H. Hardy. Sur les zéros de la fonction $\zeta(s)$ de Riemann. *C. R. Acad. Sci. Paris*, 158:1012–1014, 1914.