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On the limits of real-valued functions in sets involving $\psi$-density, and applications. (English)


Summary: New results on upper and lower limits of real-valued functions are proved by means of $\psi$-densities introduced by P. D. Barry in 1962. This leads to improvements of several existing results on the growth of non-decreasing and unbounded real-valued functions in sets of positive density. The $\psi$-densities allow us to introduce a new concept of a limit for real-valued functions, which is used to reveal further properties on the behavior of integrable functions at infinity.

MSC:
30Dxx Entire and meromorphic functions of one complex variable, and related topics
34Mxx Ordinary differential equations in the complex domain
26Axx Functions of one variable

Keywords:
exceptional sets; limit of functions; meromorphic functions; order of growth; $\psi$-density

Full Text: DOI

References:
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