Kirtadze, Aleks
On volume type functionals in Euclidean geometry. (English) Zbl 1474.51007

Summary: The paper is concerned with some aspects of the theory of volumes in Euclidean space. In this context, it is shown that there exists a solution of Cauchy’s functional equation, which is absolutely nonmeasurable with respect to the class of all translation invariant measures on the real line \( \mathbb{R} \), extending the Lebesgue measure on \( \mathbb{R} \).

MSC:
51F20 Congruence and orthogonality in metric geometry
52C10 Erdős problems and related topics of discrete geometry
28A05 Classes of sets (Borel fields, \( \sigma \)-rings, etc.), measurable sets, Suslin sets, analytic sets

Keywords:
additive function; measure; volume

Full Text: Link

References:
[13] Solovay, R.

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