The axiomatic definition of infinitesimals

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Abstract

In this paper, we redefine the infinitesimals by using axiomatic method.

1   Introduction and results

So far, the best definition of the infinitesimals is in [Rob74]. Our mission is to find the "possible" satisfactory definition of the infinitesimals.

We try to propose the redefinition of infinitesimals in the following axiom:

Axiom 1. Let e be the infinitesimal. Then:

1. $e \neq 0$.

2. $e = 1/n$.

3. $0 \leq e \leq 1$.

We hope the definition can help us to understand the behavior of infinitesimals.

References

[Rob74] A. Robinson. *Non-Standard Analysis*. Princeton University Press, 1974.