

Abstract Submitted  
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**On the Formal–Logical Analysis of the Foundations of Mathematics Applied to Problems in Physics** TEMUR Z. KALANOV, Home of Physical Problems, Pisatelskaya 6a, 100200 Tashkent, Uzbekistan. — Analysis of the foundations of mathematics applied to problems in physics was proposed. The unity of formal logic and of rational dialectics is methodological basis of the analysis. It is shown that critical analysis of the concept of mathematical quantity – central concept of mathematics – leads to the following conclusion: (1) The concept of “mathematical quantity” is the result of the following mental operations: (a) abstraction of the “quantitative determinacy of physical quantity” from the “physical quantity” at that the “quantitative determinacy of physical quantity” is an independent object of thought; (b) abstraction of the “amount (i.e., abstract number)” from the “quantitative determinacy of physical quantity” at that the “amount (i.e., abstract number)” is an independent object of thought. In this case, unnamed, abstract numbers are the only sign of the “mathematical quantity”. This sign is not an essential sign of the material objects. (2) The concept of mathematical quantity is meaningless, erroneous, and inadmissible concept in science because it represents the following formal-logical and dialectical-materialistic error: negation of the existence of the essential sign of the concept (i.e., negation of the existence of the essence of the concept) and negation of the existence of measure of material object.

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