



## INFINITY IN MATHEMATICS AND THEOLOGY: ON THE N. N. LUZIN – P. A. FLORENTSKIY DEBATE

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The question of the contemporary significance of infinity was one of the main concerns for both the mathematician and academician Nikolay N. Luzin (1883-1950), as well as for the theologian, philosopher and naturalist, Pavel Florentskiy (1882 - 1937). One approached this question as a mathematician and scientist, the other - as a priest and theologian. The resulting Luzin - Florentskiy debate revealed a fundamental disagreement between their views. Florentskiy was a follower of the creator of Set Theory Georg Cantor\*), while Luzin supported the approach of the French mathematician Émile Borel.

Luzin argued that infinity is a concept which cannot be addressed by chance, and recognized the "right to be citizen" in mathematics only for objects that could be effectively constructed. The main objective of Luzin's critique was Cantor's concept of an innumerable (infinite) continuum, because he believed that the infinite set of actually constructed real numbers was countable.

\*) The substance of *Georg Cantor's* life's work is well-known: in developing what he called the arithmetic of transfinite numbers he gave mathematical content to the idea of the actual infinite. In so doing he laid the groundwork for abstract set theory and made significant contributions to the foundations of the calculus and to the analysis of the continuum of real numbers. Cantor's most remarkable achievement was to show, in a mathematically rigorous way, that the concept of infinity is not an undifferentiated one. Not all infinite sets are the same size, and consequently, infinite sets can be compared with one another .