



BIOGRAPHY OF N. N. LUZIN (1883-1950)

**born December 09, 1883, Irkutsk, Russia.
died January 28, 1950, Moscow, Russia.**

Biographic Data of N. N. Luzin:

Nikolai Nikolaevich Luzin (also spelled Lusin; Russian: Николай Николаевич Лузин) was a Soviet/Russian mathematician known for his work in descriptive set theory and aspects of mathematical analysis with strong connections to point-set topology. He was the co-founder of "Luzitania" (together with professor Dimitrii Egorov), a close group of young Moscow mathematicians of the first half of the 1920s. This group consisted of the highly talented and enthusiastic members which form later the core of the famous Moscow school of mathematics. They adopted his set-theoretic orientation, and went on to apply it in other areas of mathematics.

Luzin started studying mathematics in 1901 at Moscow University, where his advisor was professor Dimitrii Egorov (1869-1931).

Professor **Dimitrii Fedorovich Egorov** was a great scientist and talented teacher; in addition he was a person of very high moral principles. He was a Russian and Soviet mathematician known for significant contributions to the areas of differential geometry and mathematical analysis. Egorov was devoted and openly practiced member of Russian Orthodox Church and active parish worker. This activity was the reason of his conflicts with Soviet authorities after 1917 and finally led him to arrest and exile to Kazan (1930) where he died from heavy cancer.

From 1910 to 1914 Luzin studied at Göttingen, where he was influenced by Edmund Landau. He then returned to Moscow and received his Ph.D. degree in 1915. During the Russian Civil War (1918–1920) Luzin left Moscow for the Polytechnical Institute Ivanovo-Voznesensk (now called Ivanovo State University of Chemistry and Technology). He returned to Moscow in 1920. On 5 January 1927 Luzin was elected as a corresponding member of the USSR Academy of Sciences and became a full member of the USSR Academy of Sciences first at the Department of Philosophy and then at the Department of Pure Mathematics (12

January 1929).

In the 1920s Luzin organized a famous research seminar at Moscow University. His doctoral students included some of the most famous Soviet mathematicians: [Pavel Aleksandrov](#), [Nina Bari](#), [Aleksandr Khinchin](#), [Andrey Kolmogorov](#), Alexander Kronrod, Mikhail Lavrentyev, Alexey Lyapunov, Lazar Lyusternik, Pyotr Novikov, Lev Schnirelmann and Pavel Urysohn.

Luzin's first significant result was a construction of an almost everywhere divergent trigonometric series with monotonically converging to zero coefficients (1912). This example disproved the Pierre Fatou conjecture and was unexpected to most mathematicians at that time. At approximately the same time, he proved what is now called Luzin's theorem in real analysis.

His Ph.D. thesis entitled Integral and trigonometric series (1915) made a large impact on the subsequent development of the metric theory of functions. A set of problems formulated in this thesis for a long time attracted attention from mathematicians. For example, the first problem in the list, on the convergence of the Fourier series for a square-integrable function, was solved by Lennart Carleson in 1966.

In the theory of boundary properties of analytic functions he proved an important result on the invariance of sets of boundary points under conformal mappings (1919).

Luzin was one of the founders of the descriptive set theory. Together with his student Mikhail Yakovlevich Suslin, he developed the theory of analytic sets. He also made contributions to complex analysis, the theory of differential equations, and numerical methods.

Luzin's life was full of great mathematical achievements, interesting and stimulating contacts; he was adored by his young pupils (e.g. by Nina Bari (1901 - 1961)). But it was also full with many drastic difficulties, traitorous behavior of his several assistants and collaborators. He was hated and persecuted by terrible and perverse figure of whole Soviet mathematics - known [Ernst Kolman](#) (1892 -1979).

Luzin - as Egorov - was also practicing member of Russian Orthodox Church but his behavior was more careful and his views were not demonstrated openly. Egorov, Luzin and a few other mathematicians formed a small group of believers who were called by "[im'jaslavzi](#)" (praised to Name of God).

[Imiaslavie](#) (Russian: Имяславие) or Imiabozhie (Имябожие), also spelled imyaslavie and imyabozhie, and also referred to as onomatodoxy, is a dogmatic movement which was condemned by the Russian Orthodox Church, but that was promoted by some group of the Russian Orthodox believers, and by some other contemporary Russian writers (many of whom are associated with St. Sergius Orthodox Theological Institute in Paris), which asserts that the Name of God is God Himself. The movement emerged in the beginning of the 20th century but both proponents and opponents claim it to be connected with much religious thought throughout the history of Christianity (proponents claim its connections to the Church Fathers, while opponents claim the connections to the ancient

heresiarchs).

Luzin was in close contacts with famous orthodox priest and Church author rev. [Pavel Florensky](#) (January 21, 1882 - December 1937).

see:

Charles E. Ford, [The influence of P A Florensky on N N Luzin](#), *Historia Mathematica* 25 (1998), 332-339;

Abstract.

The study of the early history of the Moscow school of the theory of functions has been greatly enhanced by the discovery of correspondence between one of its founders, N. N. Luzin, and the priest, theologian, philosopher, and scientist P. A. Florensky. The correspondence reveals that Luzin experienced a profound spiritual crisis in 1905 when his materialist worldview collapsed. This crisis continued for three years and was finally resolved when Luzin had a decisive encounter with the religious philosophy of Florensky. After this, Luzin's interest in mathematics gradually revived until he was able, by 1909, to commit himself to a career in mathematics.

The Luzin affair of 1936.

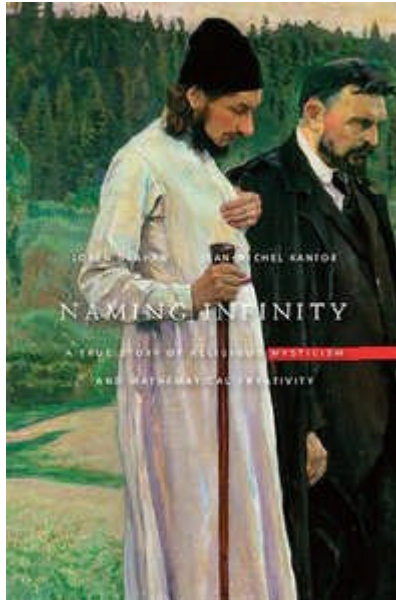
On 21 November 1930 the declaration of the “initiative group” of the Moscow Mathematical Society which consisted of former Luzin's students Lazar Lyusternik and Lev Shnirelman along with Alexander Gelfond and Lev Pontryagin claimed that “there appeared active counter-revolutionaries among mathematicians.” Some of these mathematicians were pointed out, including the advisor of Luzin, Dmitri Egorov. In September 1930, Dmitri Egorov was arrested on the basis of his religious beliefs. After arrest, he left the position of the director of the Moscow Mathematical Society. The new director became Ernst Kolman. As a result, Luzin left the Moscow Mathematical Society and Moscow State University. Egorov died on 10 September 1931, after a hunger strike initiated in prison. In 1931, Ernst Kolman made the first complaint against Luzin.

In July–August 1936, Luzin was criticised in *Pravda* in a series of anonymous articles whose authorship later was attributed to Ernst Kolman. It was alleged that Luzin published “would-be scientific papers,” “felt no shame in declaring the discoveries of his students to be his own achievements,” stood close to the ideology of the “black hundreds,” orthodoxy, and monarchy “fascist-type modernized but slightly.” Luzin was tried at a special hearing of the Commission of the Academy of Sciences of the USSR, which endorsed all accusations of Luzin as an enemy under the mask of a Soviet citizen. One of the complaints was that he published his major results in foreign journals. This method of political insinuations and slander was used against the old Muscovite professorship many years before the article in *Pravda*.

The political offensive against Luzin was launched not only by Joseph Stalin's repressive ideological authorities, but also by a group of Luzin's students headed by Pavel Alexandrov, who may have been pressured to it by threats to reveal his homosexual relationship with Andrey Kolmogorov. Although the Commission convicted Luzin, he was neither expelled from the Academy nor arrested. There has been some speculation about why his punishment was so much milder than that of most other people condemned at that time, but the reason for this does not

seem to be known for certain.

Historian of mathematics A.P. Yushkevich speculated that at the time, Stalin was more concerned with forthcoming Moscow Trials of Lev Kamenev, Grigory Zinoviev and others, and that the eventual fate of Luzin was of little interest to him. The 1936 decision of the Academy of Sciences was not cancelled after Stalin's death. The decision was reversed on January 17, 2012.



The full story of Luzin's case was presented in extraordinary clear and informative books:

1. Graham, Loren R.; Kantor, Jean-Michel (2009). Naming infinity: a true story of religious mysticism and mathematical creativity. Harvard University Press. 239 pp. ISBN 978-0-674-03293-4.

"The police soon learned of Kolmogorov and Alexandrov's homosexual bond, and they used that knowledge to obtain the behavior that they wished. When the police asked Kolmogorov and Alexandrov to join in attacking Luzin, they did so."

See review of this book by Roger Cooke:

Roger Cooke, Reviews - Naming Infinity by Loren Graham and Jean-Michel Kantor, Cambridge, MA: Harvard University Press, 2009, 239 pp.

ISBN:978-0-674-03293-4,

[The Mathematical Intelligencer](#) Volume 32, Number 1 (2010), 59-64, DOI:

10.1007/s00283-009-9080-8;

Russian translation of Graham and Kantor book:

Лорен Грэхем и Ж.-М. Кантор. ИМЕНА БЕСКОНЕЧНОСТИ. Правдивая история о религиозном мистицизме и математическом творчестве. (Изд. Европейского Ун-та, СПб., 2011).

2. A.P. Yushkevich, The Lusin Affair (in Russian).

3. Demidov, S. S.; Levshin, B. V. (eds.) (1999). [Delo akademika Nikolaya Nikolaevicha Luzina](#). (Russian) (The case of Academician Nikolai Nikolaevich Luzin). St. Petersburg: Russkii Khristianskii Gumanitarnyi Institut. ISBN 5-88812-103-7.

4. Demidov, Sergei S.; Ford, Charles E. (1996). N. N. Luzin and the affair of the "National Fascist Center". San Diego, CA: Academic Press. pp. 137–148. ISBN

5-88812-103-7.

The BIOGRAPHY of N. N. LUZIN can be found in a few places.

Wikipedia electronic Encyclopedia(<http://en.wikipedia.org/>), an article [N. N. LUZIN](#).

Additional data and very useful historical account can be found in the books and other publications:

1. Колягин Ю.М., Савина О.А., Дмитрий Федорович Егоров: Путь ученого и христианина.

отв. ред. проф. В.И. БОГАЧЕВ.

Изд. Свято-Тихоновского Университета, Москва, 2010. 302 с. [in Russian]

2. V.F. Panov, "Modern Mathematics and its Creators", MVTU Publ., Moscow, 2011. [in Russian];

Панов В.Ф., Современная математика и ее творцы. 2011. 646 с.

3. [Russian Mathematicians In The 20th Century](#), editor Yakov Sinai, Princeton University, USA.

(World Scientific, Singapore, 2003).

4. Yakov Sinai, Nikolai Nikolaevich Luzin. Biography. in:

[Russian Mathematicians In The 20th Century](#). World Scientific, Singapore, 2003.

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The following sections are included:

Biography

Sur l'absolue convergence des series trigonometriques, C. R. Acad. Sci, Paris 155 (1912).

Sur la convergence des series trigonometriques de Fourier, C. R. Acad. Sc. Paris 156 (1913).

Sur une decomposition d'un intervalle en une infinite non denombrable d'ensembles non mesurables, Comptes Rendus, 165 (1917) (with Sierpinski).

The influence of P. A. Florensky on N. N. Luzin, Historia Mathematica 25 (1998) (by C. E. Ford).

5. S. S. Kutateladze.

(Sobolev Institute of Mathematics, pr. Akad. Koptyuga 4, Novosibirsk, 630090 Russia)

[The Tragedy of Mathematics IN RUSSIA](#).

Contents:

The Case Against Luzin.

Roles of Luzin's Students.

Reactions of Luzin's Contemporaries.

Mathematical Roots of the Luzin Case.

A Few Lessons.

Acknowledgements.**References.**

ЛУЗИН Николай Николаевич (1883-1950) - российский математик, основатель научной школы по теории функций, академик АН СССР (1929). Основные труды по метрической и дескриптивной теории функций действительного переменного, а также аналитическим функциям, дифференциальным уравнениям, дифференциальной геометрии.

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