



**NIKOLA  
OBRESHKOFF  
(1896 – 1963)**

Nikola Obrechhoff was born in the town of Varna on March 6, 1896, in a large 8 children family, as the son of a military officer.

His mathematical affiliation emerged in his teenage years when only sixteen years old he published his first work “Expressing functions of an angle  $x/2$  in terms of functions of  $x$ ”.

Obrechhoff graduated from the Mathematical Department of Sofia University in 1920. In 1922–1923 he was sent on a postgraduate specialization in Berlin. He got his first doctoral degree from the University of Palermo, Italy, in 1932. In 1933 Nikola Obrechhoff obtained a doctor of science degree (Docteur des sciences) from the Sorbonne, Paris. His second thesis “Sur la sommation des séries divergentes” was published in the most distinguished mathematical journal – Acta Mathematica, founded by Mittag Leffler.

He was assistant professor in Differential and Integral Calculus at Sofia University in the period 1920–1922. In 1922 he became an associate professor of algebra. Since 1925 till 1928 he was an extraordinary professor. In 1928 he became a full professor. Since 1928 till his death in 1963 he was a Chairman of the Algebra Department at Sofia University.

Nikola Obrechhoff became a regular member of the Bulgarian Academy of Sciences in 1945. Since 1951 he was Director of the Mathematical Institute.

Obrechhoff was giving lectures in Algebra, Probability Theory, Summability of Divergent Series, Number Theory. He was a visiting professor at the universities of Hamburg, Berlin, Geneva, Rome, Palermo, Leipzig, Dresden, and other.

He has written more than 240 scientific research papers covering a wide range of Mathematical Analysis, as well as in Algebra, Number Theory, Statistics and Probability, Mechanics, Numerical Analysis. He was a master of Classical

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Issue 4 of vol. **22** (1996) of *Serdica Math. J.* is devoted to the 100<sup>th</sup> anniversary of Acad. N. Obreshkov and contains detailed description of his achievement in mathematics and complete list of his publications. See also the review by P. Rusev of N. Obreshkov’s Selected Papers in *Serdica Math. J.* **32**, 4, 379–382.

Analysis with a profound contribution to the Theory of Divergent Series, one of the best specialists on the Distribution of Zeros of Algebraic Polynomials, and Summability of Divergent Series. Author of books on Algebra, Probability, Number Theory. Author of the monography “Zeros of Polynomials”, published by the Bulgarian Academy of Sciences, and “Verteilung und Berechnung der Nullstellen reeller Polynome”, published by the German Academy of Sciences. This work was highly evaluated by scientists. I. Schoenberg described it as “the wonderful presentation”.

Obrechhoff became famous in the scientific world after his interesting generalization of the classical Descartes’ rule of sign about estimating the number of positive roots of algebraic equations that he developed and extended to the case of complex roots.

He studied and offered new integral transformations that became a focus of interest later. Obrechhoff suggested an interesting extension of the classical Taylor’s formula, from where he derived an explicit interpolation quadrature formula with two nodes. He obtained sharp estimates for the derivatives of functions defined on infinite intervals on the real line.

He wrote a number of remarkable papers on summability of divergent series. He studied and introduced a new method of summability. He even solved the problem of summability by arithmetic means of the derivative of Fourier series. He established Tauberian type theorems for series with gaps.

His works cover a wide range of mathematical fields. Obrechhoff suggested numerical methods for solving algebraic equations; in the Probability Theory he offered a new approach in studying the discrete time Markov chains; he also studied the asymptotic behavior of classical orthogonal polynomials, he proved the Descartes’ rule for series of orthogonal polynomials; as well as he studied the expansion of analytic functions with respect to bi-orthogonal systems. He was active in research till the end of his life.

When he was sixty years of age, Obrechhoff made a significant discovery in Diophantine Analysis – he solved a problem that had been open for 50 years. In fact, he proved that Borel’s constant in the approximation of linear forms is equal to 1.

Nikola Obrechhoff participated in many international conferences and congresses in mathematics – in Oslo (1936), Edinburgh (1958), Stockholm (1962).

He was a honorable laureate of the most prestigious state awards in science and culture.

Among his followers have been Acad. Lubomir Iliev, Acad. Blagovest Sendov, Prof. Petar Rusev, Assoc. Prof. Kiril Dochev.

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