

## OUTSTANDING MATHEMATICIAN AND PEDAGOGUE (TO THE 100-TH ANNIVERSARY OF MAJID RASULOV)



In 2016, passes 100 years since the birth of one of the founders of the journal *Differentsialnie Uravnenia*” academician Majid Latif oglu Rasulov. In his 60-th and 70-th anniversaries the articles devoted to his scientific activity and a list of scientific works were published in the journal. Majid Rasulovs 100-th anniversary motivates us, who knew him, loved and worked with him, to honor his memory once again, and to talk about this strong man, scientist, pedagogue and leader that has lived in difficult time and was not always fully opened to the people around him. We should say something about the time and place that he occupied in the history of science and society in general.

Majid Rasulov was born on July 6, 1916 in the city of Nukha (now Sheki) of Azerbaijan. Throughout his life he had to hide his origin, and until recently the published informations about his family and childhood were extremely scarce. Now they can be drawn out from the scientific and bibliographic book written by his son T.M. Rasulov and his follower Y.A. Mamedov. Sheki has long been famous for its beautiful silk, and M. Rasulovs father Haji Latif was the owner of a fairly large silk factory. The family respected the work, different interests and education. Majid Rasulovs elder brother was interested in mathematics and literature, later he graduated from the Pedagogical University and became a teacher of mathematics in Sheki. Apparently, he had the right effect on his younger brother and his example prompted him the choice of life. Majid Rasulovs junior brother was a candidate of geological sciences and did much to map the regions of Azerbaijan. Majid Rasulov’s childhood occurred in the years of major historical events and upheavals that did not spare his family. In 1928, when he was in the fifth grade, his father Haji Latif was arrested by Nukha-Zakatala ACRI, their property was confiscated and the family was casted into exile to Kazakhstan.

There, in 1930 his father dies and the family was permitted to return to Sheki. Two more years of school, then the Industrial College in Baku and in 1934 he joins the Physics and Mathematics faculty of Azerbaijan State Pedagogical Institute named after V.I. Lenin that graduates it in 1938 with the first degree diploma. Despite this discontinuous by today’s concepts of study, Majid Rasulov was a deeply educated man, interested in literature, art, history, social issues. His knowledge was deeply thoughtful and heartfelt, open interlocutors in serious unusual and interesting points of view on many issues. This is evidenced by the people that communicated with them at different times and in different circumstances.

At that time, a prominent specialist in the field of differential equations and later academician of the Academy of Sciences of Ukraine Yaroslav Borisovich Lopatinsky has lived and worked in Baku.

In 1938 under his guidance M.L. Rasulov joins the post-graduate course of Azerbaijan State University and begins to work as an assistant at the chair of mathematical analysis and the pedagogical activity launched here did not stop until the end of his life.

In 1939 the World-War II and then the Soviet-Finnish war begins. Due to deterioration of international situation, the deferment of people with higher education was cancelled and M.L. Rasulov was called up to army. The end of his service in 1941 coincided with the beginning of the Great Patriotic War of the Soviet Union against Nazi Germany and from the very beginning of the War, M.L. Rasulov was sent to the Western Front where he began to fight in the position of leader of artillery regiment squad. In August, 1941, in the battles at Lutsk he was wounded and after the treatment was again sent to the front. In 1943 he was assigned to the rank of lieutenant and was awarded the medal For defence of Caucasus for showing the courage to fight. Finally, after going through the war, in the Victory Day, may 9, 1945 he was awarded the medal For the victory over Germany. Lieutenant M.L. Rasulov was dismissed only on December 1945. At that time he was already 29 years old and almost 10 of them were given to the exile and war. Returning to Baku, he immediately was restored in graduate school and began to work as a senior lecturer at the chair of mathematical analysis of Azerbaijan State University. Hence his brilliant scientific and educational biography begins. He gives lectures and carries out seminars at the physics and mathematics faculty. At the same time he guides a student seminar on theory of real variable functions. It was the post-war years full of joys of victory and at the same time severe pain from multimillion human sacrifices, the years of intensive and hard work for reconstruction and development of war-ravaged economy. On one hand obvious domestic and financial difficulties after the world war II, the lack of many basic and necessary things, on the other hand, the same years were related to a surge of creative energy and enthusiastic that returned people to civilian life. Many remarkable soviet figures of science, art and literature were formed at that time. Active creative atmosphere existed also at Azerbaijan State University. In this situation M.L. Rasulov could draw attention to himself.

In 1946 his supervisor Ya.B. Lopatinsky moves to Lvov. Insisting that M.L. Rasulov must not interrupt his studies, he invites him to Lvov. Having moved to Lvov M.L. Rasulov continues to study here in post-graduate courses of Lvov branch of the Academy of Sciences of Ukraine and simultaneously lectures at I. Franko Lvov State University. It should be underlined that the intelligent man and a brilliant scientist Ya. B. Lopatinsky had a great influence on forming his follower as a personality and a scientist. M.L. Rasulov carries out throughout his life deep respect, infinite gratitude to him and faith friendship with this scientist. In Lvov M.L. Rasulov was formed as a scientist and pedagogue. In 1948 he finished his PhD thesis Investigation of the residue method for solving some mixed problems for differential equations. At the same 1948 year he returned back to Baku and on February 8, 1949 he defended his dissertation at the meeting of the Academic Council of physics-mathematics faculty of Azerbaijan State University.

After defence he continued to work at Azerbaijan State University as a senior lecturer, and then from 1949 as an assistant professor of the chair of Mathematical Analysis.

In 1953 by the invitation of Ya.B. Lopatinsky he again moved to Lvov and continued his research work as an assistant professor of the chair of Differential Equations of Lvov State University. By 1959 he completed his studies in the residual method and results obtained at those years lied on the basis of his doctoral dissertation. In this work he suggested and developed a new method for solving a wide class of linear problems for partial differential equations with variable and discontinuous coefficients, generally speaking not self adjoint and containing time derivatives in boundary conditions. He also developed the spectral theory of problems corresponding to the studied mixed problems in which he gave the formula of multiple expansions and proved its validity.

In 1959 in Moscow, at V.A. Steklov Institute of mathematics of the Academy of Sciences of the USSR, he defended his doctoral thesis on The residue method for solving mixed and boundary value problems for partial differential equations. Official opponents were the brilliant scientists, even then the world renown experts that gave the most positive references, doctors of physical-mathematical sciences M.A. Naimark and A.V. Bitzadze (later a corresponding member of the Academy of sciences of the USSR and as M.L. Rasulov, a member of the editorial board of the authoritative journal *Differentsialnie Uravnenia*). In 1960 M.L. Rasulov returned to Baku and headed here the chair of Equations of mathematical physics of Azerbaijan State University and directed it continuously 33 years until the last days of his life. Working as a head of the chair he lectures on differential equations, the equations of mathematical physics and conducts special courses. The future academicians N.A. Guliyev, K.N. Jalilov, F.G. Maksudov, J.E. Allahverdiyev, corr. members of ANAS Ja. D. Mammadov, Yu.A. Mamedov were among his students. At the same time he begins to train young scientists. From 1964 to 1991, more than 20 PhD dissertations were defended under his supervision and by the method created by him. Further, many of his students constitute the backbone of the chair headed by him. Ya. A. Mamedov and N.M. Mammadov defend doctor dissertations. On the death of his teacher, Yu.A. Mamedov (now the corresponding-member of ANAS, Honored scientist and holder of the order of Merit) continues his work and is at the head of the chair of equations of mathematical physics. In 1964 in Moscow publishing house Nauka M.L. Rasulovs first monograph The method of contour integral was published. Scientific editor of the monograph professor A.V. Ivanov wrote: M.L. Rasulovs monograph is an exceptional phenomenon in mathematical literature. There is no such a book in world press. It is of great applied value and contains a detailed statement of new scientific directions in mathematical physics that was created by the author in recent years. M.L. Rasulov was able to propose a new constructive method for solving the most complex and urgent problems of mathematical physics that still were not solved by the known methods. Mathematical society of Azerbaijan has every reason to be proud that such a book was written at Azerbaijan State University.

In 1964 and 1965 he gives lectures on the method developed by him at All Union Society Knowledge and as well as at Red Banner of Labour order scientific

research institute of current supply. In his letter of thanks, director of VNIIT N.S. Liderenko wrote: Professor M.L. Rasulovs lectures dedicated to the methods developed by him for solving the most complex problems are of exceptional interest for all specialists encountered in the practical works with necessity of solving important problems reducing to complex systems of partial differential equations with complex boundary conditions. It should be noted that M.L. Rasulovs monograph Contour Integral Method has attracted the attention not only of the Soviet but also of the mathematical Society of the world. In 1967 commissioned by the British Royal Society this monograph was translated into English and was published in North-Holland Publishing Company. Interscience Publishers, division of John Wiley and Sons. Inc. New York (Library of Congress Catalog Card Number 67-20014) was the distributor in the USA and Canada. From 1965 to 1967 he was the editor of the journal *Ucheniye zapiski Azerbydzahnskogo Gosudarstvennogo Universiteta*.

In 1968 M.L. Rasulov was elected a corresponding member of the Academy of Sciences of Azerbaijan SSR. In 1975 his second book Application of the contour integral method was published again in the publishing house Nauka. In 1983 M.L. Rasulov was elected an academician of the Academy of Sciences of Azerbaijan. 1989 the Publishing house Elm of the Academy of Sciences of Azerbaijan publishes M.L. Rasulovs third book Application of the residue method to solving the problems of differential equations. In 1989 he was given the honorary title Honored scientist of Azerbaijan SSR.

Besides three fundamental monographs M.L. Rasulov has authored 85 scientific papers and 50 of them have been published in the most prestigious scientific journals of the USSR.<sup>1</sup> For his great contribution to science and almost 50 years pedagogical activity, M.L. Rasulov was repeatedly awarded with numerical awards, honors, decorations and medals. Order of the Patriotic War and order of the Red Banner of Labour are the most prestigious awards of that time.

M.L. Rasulovs life path ended in 1993. He died in Baku and was buried in the Alley of Honor among the most respected figures of Azerbaijan.

Summarizing now the memories and impressions of joint work with him, thinking of his scientific legacy and style of the leadership, with regard to already formed and growing over the years distance that separates him from us, we would like to make a number of general concepts relating to M.L. Rasulovs life, creative work and scale of personality. A lot and true has been said and written about the fact that M.L. Rasulov is one of the greatest mathematicians who made a significant contribution to the development of mathematical physics. In the scientific literature, the concept of the residue method and contour integral method developed by him was firmly established. To what has been said, we should add (and may be we should start with this) that Majid Rasulov was a wise man and a strong personality. He lived a very difficult life: the revolution, exile, World War II that killed many millions of people, restoration of country destroyed by the

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<sup>1</sup>One can find the list of published papers of M.L. Rasulov in the papers "Majid Latifovich Rasulov (to 60-th anniversary)", 1976, vol. 12, No 7 and Majid Latifovich Majidov (70-th anniversary)", 1986, vol. 22, No 7, in the journal *Differentsialniye Uravnenia*.

war. The wisdom and the right choice what to do, responsibility and integrity allowed him to optimally realize his potential and abilities, to achieve good results for the benefit of our science and society.

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