

JENALIYEV MUVASHARKHAN TANABAYEVICH
(ON HIS 70-TH BIRTHDAY)



January 25, 2017, Doctor of Physical and Mathematical Sciences, Professor Jenaliyev Muvasharkhan Tanabayevich, well-known specialist in the theory of differential equations in partial derivatives and its applications, Chief research scientist of Institute of Mathematics and mathematical modeling of the Committee of Science of the Ministry of Education and Science of the Republic of Kazakhstan celebrates 70 years.

M.T.Jenaliyev was born in Aktobe area (now farming Tole-bi) of Shu district of Zhambyl region in the family of rural workers. Father of Muvasharkhan

Tanabayevich, Zhienaliyev Tanabai (1894 born), worked for many years as a shepherd, mother, Zhienaliyeva Tenge (1922 born), had helped him in such difficult shepherd work until his death in 1961. Since 1961 to 1978 (until the retirement) she was working on various working positions. All four Zhienaliyev's children have got higher education, thanks to the selfless work of the mother. The hard work of the shepherd is not alien also for Muvasharkhan, during the summer holidays, he helped his parents in their hard work.

In 1953 Muvasharkhan Tanabayevich entered the seven-year Kazakh school of Aktobe area, where he finished the first grade with the creditable letter. In connection with moving the parents in the Mikhailovka village (later, the Chatyr-kul village) in 1954, he entered again in the first grade of seven-year Russian school because of the following argumentation of school leadership: Muvasharkhan do not know Russian?! However, over the years he mastered the Russian language so that he finished the first grade also with the creditable letter. And then he continues to study only in Russian, in 1965 he finished the 11th grade of the secondary school named after M.Gorky in the Novotroitskoye village (now Tole-bi). Since 9th grade Muvasharkhan became interested in mathematics, the main role in this fact belongs to his teacher of mathematics, senior teacher of the secondary school named after M.Gorky, Kutuzov Alexander Yakovlevich. In 1964 and 1965 in Almaty, he participated in the 2nd and 3rd Kazakhstan Mathematical Olympiad, on the latter of which he was rewarded with a special prize and diploma of the second degree.

In 1965 he entered the Kazakh polytechnic institute named after V.I. Lenin at the faculty of "Automation and computer engineering" and in 1971 graduated by the specialty "Automatics and telemechanics" with the qualification "Electrical engineer" ..

In the years 1971–1976 M.T.Jenaliyev worked consistently as an engineer, senior engineer and head of the projecting team at the Kazakh branch of the SPI "Proektmontazhavtomatika" (Almaty). He worked over the projecting of dispatching systems for energy supply facilities using telemechanical equipments.

In the years 1976–1980 at the Kazakh State University M.T. Jenaliyev studied in the postgraduate school under scientific supervision of Professor S.A.Aysagaliev, defended his candidate dissertation (1982) and a doctoral dissertation (1994). In 1984 he was given the academic title of "Senior Scientist", and in 1996 he was given the academic title "Professor".

Since 1980 M.T.Jenaliyev is working at the Institute of Mathematics and Mechanics of Academy of Sciences of the Kazakh SSR (now the Institute of Mathematics and mathematical modeling SC MES). M.T.Jenaliyev has passed

all stages of academic institution positions: JRSc, SRSc, LRSc, ChRSc, Head of the Laboratory of equations of mathematical physics, Deputy Director for scientific work, from 1 January 2007 he carried out Director's duties and then from August 2008 to 2011 he was Director of the Institute of Mathematics.

His scientific achievements are published in the journals "Differential equations" , "Siberian Mathematical Journal" , "Boundary value problems", "Advances in difference equations", "Mathematical Journal" (Almaty), "Proceedings of the Institute of Mathematics of NAS of Belarus" , "Reports of the National Academy of Sciences of the Republic of Kazakhstan", "Non-classical equations of mathematical physics" (Institute of Mathematics. Sobolev SB RAS), "Reports of Adyghe (Circassian) International Academy of Sciences", "News of the National Academy of Sciences of the Republic of Kazakhstan. Physico-mathematical series" and others. We list his main results.

It is proven a theorem on sufficient conditions for optimality and on its basis it is developed an algorithm of approximate solution to the optimal control problem by parabolic equation. This result is the development of the principle of V.F.Krotov's optimality for equations with partial derivatives, taking into account their solvability in the corresponding Sobolev classes (in the sense of integral identity). A novelty here is the introduction of the auxiliary functional and special constructions that has allowed to remove the restriction on reducing the differential equations in partial derivatives to the normal form, and that has allowed to reduce the initial problem on a conditional extremum to the problem on an unconditional extremum in the functional Sobolev spaces. This result was the basis of M.T.Jenaliyev's candidate dissertation.

For boundary value problems with derivatives with respect to time on the boundary for parabolic and hyperbolic equations M.T. Jenaliyev has discovered the effect of "over-determination" at setting the initial conditions in the domain and on the boundary from a class of square integrable functions (which are not matched according to the trace theorem). He has established the solvability of boundary value problems for linear loaded equations with irregular coefficients. Symmetrization operator for the loaded parabolic equation, Hilbert space as type of K.Friedrihs' space, quadratic functional are constructed, for the functional the Euler equation gives a generalized statement of the initial boundary value problem. By these results M.T.Jenaliyev has defended his doctoral dissertation.

In terms of the (complex) spectral parameter, which is the coefficient of the loaded summand, description of the resolvent is set and a spectrum for the spectrally loaded parabolic operator are found, characteristic of the multiplicity of their eigenfunctions in the space of bounded continuous functions is given de-

pending on the value of the spectral parameter (together with M.I.Ramazanov).

In recent years, together with the staff M.T.Jenaliyev conducts researches on homogeneous boundary value problems for heat conduction equation in the degenerating non-cylindrical domains. It has been established that in addition to the trivial solution there exist non-trivial solutions.

M.T.Jenaliyev is actively involved in training the scientific personnel. Under his scientific supervision 3 doctoral dissertations, 7 candidate dissertations and 1 thesis for PhD are defended. Since 1980 he is working concurrently and is reading special courses at the Faculty of Mechanics and Mathematics of Al-Farabi KazNU.

Muvasharkhan Tanabayevich is characterized as a business, principled, creative and hard working person, he has high sense of responsibility and professionalism, he has gained the respect in the collective of the Institute of Mathematics and Mathematical Modelling.

We congratulate Muvasharkhan Tanabayevich with the 70th anniversary and wishes him good health and creative longevity.