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In memory of Albert Nikiforovich Tavkhelidze

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Academician Albert Nikiforovich Tavkhelidze, an outstanding physicist and scientific organizer, one of the founders and the science supervisor of the Institute for Nuclear Research of the Russian Academy of Sciences (RAS), winner of the Lenin and State Prizes, one of the creators of the color quarks theory, and one of the initiators of this research area at the Joint Institute for Nuclear Research (JINR) in Dubna, died on 27 February 2010, near his 80th birthday.

Albert Nikiforovich Tavkhelidze was born in Tbilisi, in the Georgian Soviet Socialist Republic of the USSR. In 1948, he enrolled in the Physics Department of Tbilisi State University and graduated from there in 1953, having majored in theoretical physics. In 1956, having graduated from postgraduate courses of the USSR Academy of Sciences V A Steklov Mathematical Institute, A N Tavkhelidze was invited by N N Bogoliubov and A A Logunov to work at the JINR Laboratory of Theoretical Physics (LTF).

At Dubna, A N Tavkhelidze rose steadily from Researcher to Deputy Director of the LTF. In 1963, he submitted and defended his DSc thesis and in 1965 became a full Professor. Together with Academicians N N Bogoliubov and A A Logunov, he shaped the research staff of the LTF. His style and personality influenced the growth of research traditions and helped build a creative atmosphere in the Laboratory. Having left Dubna, A N Tavkhelidze continued to closely follow the progress of the LTF and of the JINR as a whole, despite his massive load of science administration. His activities helped the maturation of new fields of research, strengthened international cooperation, and helped formulate the science policies at the JINR.

A N Tavkhelidze, an internationally recognized physics theorist, published more than two hundred scientific papers which reflect the impressive span of his interests in physics. Among the main research interests and the fundamental results achieved are: dispersion relations and approximate equations in quantum field theory (QFT), the quasipotential method in QFT, finite-energy sum rules and duality, the origin of fermion masses and the phenomenon of spontaneous breaking of symmetry, color — a quantum number, a physical model of hadrons as bound states of color quarks, scale invariance of processes at high energies, the principle of self-similarity, the quark counting rule, the structure of the ground state and nonconservation of fermion and baryon numbers in gauge theories. The science program for the NIKA collider being created at the JINR is based on theoretical ideas developed in the work of N N Bogoliubov, A M Baldin, A N Tavkhelidze, and their followers.

A N Tavkhelidze's achievement in the pedagogical and science organization spheres is important. He took active part in the creation of the RAS Institute for Nuclear Research (INR) and became its first Director. Albert Nikiforovich organized the school of theoretical physics at the INR, nurturing a constellation of brilliant scientists around him; some of them are now Full Members of the RAS and academies in other countries. A N Tavkhelidze actively promoted progress in modern theoretical physics, organizing the training of researchers in the leading research centers in Russia, Georgia, Ukraine, Bulgaria, and other JINR member countries. In recent years, he founded a new Chair of Particle Physics and Cosmology at the Physics Department of Moscow State University. In Georgia, he created the Institute of High-Energy Physics affiliated with Tbilisi State University and the Department of Theoretical Physics at the Mathematical Institute of the Georgian Academy of Sciences. Together with Nikolai Nikolaevich Bogoliubov, he played a special role in creating the Institute of Theoretical Physics of the Ukrainian Academy of Sciences.[1]

A N Tavkhelidze was President of the Georgian Academy of Sciences for 20 years and accomplished very much,

Albert Nikiforovich Tavkhelidze
(16.12.1930 – 27.02.2010)

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[1] Renamed since 1992 as the N N Bogoliubov Institute of Theoretical Physics of the National Academy of Sciences of Ukraine.

strengthening the contribution of the Georgian Academy of Sciences to the scientific and intellectual life of Georgia.

Academician A N Tavkhelidze was a true internationalist-scientist and spent much energy protecting the unity of the science-and-innovation space of the CIS countries, stimulating flourishing scientific and technological international links. He was member of the Committee of Plenipotentiary Representatives and of the JINR Scientific Council (Dubna), was one of the founders and Vice President of the International Association of Academies of Sciences (IAAS), and was an active participant of the Pagwash Movement of Scientists for Peace.

In 1988, A N Tavkhelidze was awarded the Lenin Prize for a series of publications ''New quantum number — color and establishment of dynamic regularities in the quark structure of elementary particles and atomic nuclei''; the USSR State Prize (1973) for a series of papers entitled ''Photoproduction of π mesons on nucleons''; the State Prize of the Russian Federation (1998) for creating the Baksan Neutrino Observatory of the RAS Institute for Nuclear Research and for studies in neutrino astrophysics, and the Prize of the Government of the Russian Federation (2001) for the development, building, and launching into scientific orbit the high-current linear accelerator for protons of the Moscow Meson Factory.

In 1987, the USSR State Registry of Discoveries recorded the discovery of the 'Matveev–Muradyan–Tavkhelidze quark counting rule'. In 2003, the JINR Scientific Council awarded A N Tavkhelidze the N N Bogoliubov Prize for his outstanding contribution to the development of the theory of color quarks. A N Tavkhelidze also received a number of highest decorations of the USSR and the Russian Federation.

Albert Nikiforovich was fully and happily devoted to science, yet had a gift of incomparably concentrating on his goals and of an enviable capacity for work and for organizing people into teams to solve large-scale problems. He demanded much from himself and his colleagues, remaining at the same time kind and responsive. His death is an irreplaceable loss for the global science community and for his numerous grieving students and followers.

Those who knew this wonderful person and brilliant scientist will forever remember his charm and warmth.

V S Vladimirov, V G Kadyshevsky, A A Logunov,
V A Matveev, Yu S Osipov, B E Paton,
E M Primakov, V A Rubakov, V A Sadovnichy,
A N Sissakian, A N Skrinsky, D V Shirkov