ISSN 1063-780X, Plasma Physics Reports, 2009, Vol. 35, No. 6, pp. 526–527. © Pleiades Publishing, Ltd., 2009.
Original Russian Text © A.A. Vasil'ev, G. Vekshtein, A.A. Galeev, N.S. Erokhin, V.E. Zakharov, L.M. Zelenyi, V.I. Karas', E.Ya. Kogan, É.P. Kruglyakov, E.A. Kuznetsov, A.G. Litvak, J.G. Lominadze, A.B. Mikhailovskii, A.I. Neishtadt, S.V. Prants, R.Z. Sagdeev, A.N. Skrinsky, A.V. Timofeev, A.M. Fridman, V.D. Shafranov, 2009, published in Fizika Plazmy, 2009, Vol. 35, No. 6, pp. 575–576.

OBITUARY

In Memory of Georgy Moiseevich Zaslavsky

(May 31, 1935–November 26, 2008)

PACS numbers: 01.60.+q
DOI: 10.1134/S1063780X09060105

Georgy Moiseevich Zaslavsky, an eminent theoretical physicist, a professor at the Courant Institute and Department of Physics of New York University (United States), and a doctor honoris causa at Aix-Marseille I University (France), passed away on November 26, 2008 after an extended illness.

Zaslavsky was born on May 31, 1935, in Odessa. After graduating from the Department of Physics and Mathematics of Odessa State University in 1957, Zaslavsky moved to Novosibirsk. It was the beginning of the Golden Age of Siberian science. At first, he was merely a senior laboratory assistant at the Novosibirsk Electrotechnical Institute, but soon became a lecturer at Novosibirsk State University and, in 1964, defended his candidate thesis. After 1965, Zaslavsky worked at the Institute of Nuclear Physics of the Siberian Branch of the USSR Academy of Sciences in Novosibirsk.

At the end of the 1960s, after having signed a letter in defense of Soviet dissidents, Zaslavsky had to abandon Novosibirsk and, for 14 years, worked at the Institute of Physics of the Siberian Branch of the USSR Academy of Sciences in Krasnoyarsk, where he headed the laboratory of the theory of nonlinear processes. Simultaneously, he taught at Krasnoyarsk University. In 1973, Zaslavsky defended his doctoral thesis and became a professor. In 1984, he was invited in Moscow to work at the Space Research Institute of the USSR Academy of Sciences. Here, he created a laboratory that was occupied with problems of dynamical chaos and nonlinear dynamics, as well as with their applications to plasma physics and hydrodynamics. While working at the Space Research Institute, he mentored many talented pupils.

Since 1991, Zaslavsky lived in the United States, where he became a professor of physics and mathematics at the Courant Institute and Department of Physics of New York University. Zaslavsky was an invited professor at many universities all over the world and invited lecturer at the largest international conferences. Many world-famous physicists have been his students. He edited a dozen international collections of papers and was a coeditor of a number of scientific journals, such as *Chaos* and *Physical Review E*.

When working at the Institute of Nuclear Physics (Novosibirsk), Zaslavsky, together with R.Z. Sagdeev, S.S. Moiseev, and V.N. Oraevsky, carried out a series of studies on the stability of plasmas with anisotropic particle velocity distributions, analyzed the role played by viscosity, developed asymptotic methods in the hydrodynamic theory of plasma stability with allowance for mode conversion in inhomogeneous plasma, and studied anomalous plasma diffusion in a magnetic field. At the Space Research Institute, he investigated, in particular, nonlinear dynamic and radiation of charged particles trapped by an electromagnetic wave in a magnetic field.

It is impossible to overestimate Zaslavsky's contribution of to the physics of chaos in dynamical systems. The eight books and more than 300 scientific papers that he published, alone or with coauthors, have

inspired several generations of physicists and mathematicians to devote their effort to studying dynamical chaos. A survey that B.V. Chirikov and he published in *Physics Uspekhi* in 1971 was, in fact, the first paper that brought to the attention of physicists the boundless world of chaos in dynamical systems of small dimensionality, which was previously a concern of a close circle of mathematicians. The book *Introduction to Nonlinear Physics,* written in 1988 together with Sagdeev and then translated into English, became a classic textbook on the physics of chaos for students, post-graduates, and scientists all over the world. The theory of a stochastic layer and separatrix mapping, developed by Zaslavsky and his collaborators in the 1960s, is a universal tool for studying Hamiltonian systems of different natures in plasma physics, hydrodynamics, quantum physics, and other branches of science. The discovery of stochastic webs with crystalline and quasi-crystalline symmetries, Zaslavsky mapping, generalization of the Focker–Plank–Kolmogorov equation, anomalous transport in phase space, studies of chaotic behavior of streamlines, nonlinear quantum resonances, estimation of the time during which the semiclassical approach remains valid in quantum chaos (the Zaslavsky–Berman time), and investigation of fractional kinetics in random Hamiltonian systems—are only part of his great contribution to the physics of chaos over the 50 years of his active research carrier. Many papers by Zaslavsky have generated new research trends in various fields of physics.

Zaslavsky was a man of high moral standards who was attentive to his friends and colleagues. Working in New York over the past several years, he created a "Russian oasis" at the tenth floor of the Courant Institute building in Mercer St. He invited Russian scientists to participate in joint research projects, thereby providing them with intellectual and material support in difficult times. Zaslavsky was not only a scientist of broad outlook, but also a versatile man interested in music, painting, theater, and literature. Everyone who ever met him at conferences on chaos remembers evening parties thrown in his hotel room full of fascinating tales and lively scientific discussions. Zaslavsky generously shared his knowledge and ideas, as well as his money, if necessary. His favorite saying was "The grave shroud has no pockets."

The death of Zaslavsky is a great loss to the scientific community. His books and papers will long inspire new generations of physicists for further development of the above research areas. Everyone who worked with Zaslavsky will always remember him as a brilliant scientist, a remarkable teacher, and an honest and forthright man.

A.A. Vasil'ev, G. Vekshtein, A.A. Galeev, N.S. Erokhin, V.E. Zakharov, L.M. Zelenyi, V.I. Karas', E.Ya. Kogan, É.P. Kruglyakov, E.A. Kuznetsov, A.G. Litvak, J.G. Lominadze, A.B. Mikhailovskii, A.I. Neishtadt, S.V. Prants, R.Z. Sagdeev, A.N. Skrinsky, A.V. Timofeev, A.M. Fridman, and V.D. Shafranov