Professor V.M. Starzhinskii

To the 100th Birthday Anniversary

*On March 10, 2018, the renowned Russian scientist in the area of mathematics and mechanics, Viacheslav Mikhailovich Starzhinskii, would have turned 100 years old. To commemorate Professor Starzhinskii's valuable contribution to nonlinear dynamics, the Editorial Board of the Journal presents a short biographical sketch of his life and academic activities. A detailed review of his scientific and pedagogical activities is presented in the Section "Personage in Science" in the article "Professor V.M. Starzhinskii" by A.A. Martynyuk, J.H. Dshalalow, and V.I. Zhukovskii, Nonlinear Dynamics and Systems Theory, **8**(1) (2008) 1–6.*

Viacheslav Mikhaylovich Starzhinskii was born on March 10, 1918, in the village of Lemeshevichi of the Pinsky district, part of the Pinsky region (now the Brest region in Belarus). In 1935, he was admitted to the Department of Mechanics and Mathematics of Moscow State University to study mechanics. His graduation from Moscow State University coincided with the beginning of the Second World War. As a result, from 1941 to 1944, he worked as a constructor engineer at the military plants in Stupino town of the Moscow region and Verkhnyaya Salda town of the Sverdlov region. Then, from August 17, 1944 till September 9, 1945, he taught at the Verkhne-Salda Avia-Metallurgical Technical School of Narkomaviaprom (The Ministry of Aircraft Industry).

In October, 1945, Viacheslav Mikhailovich was accepted to a full-time post-graduate school at the Scientific Research Institute of Mechanics of Moscow State University. At that time he got interested in automatic control systems. This influenced the topic of his upcoming PhD thesis "Some problems in the theory of tracking systems", which he successfully defended in June, 1948. That same year (on February 2, 1948) he was

appointed as a senior researcher in one of the scientific research institutes of the Ministry of Industry of Communications.

From September 1, 1950, he became an associate Professor of Mathematics in Calculus Program at the All-Union Correspondent Institute of Textil and Light Industry (A-UCITLI). On August 1, 1957, Viacheslav Mikhailovich became an associate Professor of Theoretical Mechanics Program at the A-UCITLI. In March, 1958, after defending his habilitation thesis, he became a Professor and then the Chair of the Program of Theoretical Mechanics.

Forty three years of his work at the A-UCITLI proved to be the most fruitful ones in the life of Viacheslav Mikhailovich. In 1952, he published his first paper "Sufficient stability conditions for a mechanical system with one degree of freedom". For the period of 1952–1957, he published seven more papers on the problems of stability of periodic motions. At that time, Viacheslav Mikhailovich entered a post-doctoral program for his habilitation degree at the Institute of Problems of Mechanics of the Academy of Sciences (his supervisor was the Corresponding Member of the Ac. of Sci. of the USSR, Professor N.G. Chetayev), and in 1957, he defended his habilitation thesis.

V.M. Starzhinskii published more than 150 papers and books (including 27 monographs and textbooks). His work covers the following areas:

1) The second Lyapunov method: first, second, third and fourth order equations;

2) Stability of periodic motions: estimations of characteristic constants in the second and n-th order systems; the theory of parametric resonance Mathieu and Hill equations;

3) Oscillations of substantially nonlinear systems, combination of the Lyapunov and Poincare methods, oscillating chains, energy jump, damped oscillating systems, computation of normal modes; normal modes for third, fourth and sixth order systems;

4) Application of parametric resonance theory to acoustic and electromagnetic waveguides;

5) Dynamics of a solid body: dimensionless form of the Euler-Poisson equations, oscillations of a heavy body with a fixed point, exclusive cases of Kovalevskaya gyroscope motion, QP-procedure for Kovalevskaya's case;

6) Applied problems: calculation of thread tension, elastic shaft, dynamical stability of rods, problem of three bodies, torsion oscillations of crank-shafts, pendulum on spring, thread mechanics, servo systems, cyclical accelerators.

Viacheslav Mikhailovich was a skillful lecturer. He conveyed a very complex material to his students in a clear fashion, without a compromise to the depth. His long-term teaching experience has also eventuated in the publication of many textbooks on theoretical mechanics.

During 1980 to 1988, Professor Starzhinskii delivered a series of lectures on nonlinear oscillations and parametric resonance for post-graduate students of the Mechanical and Mathematical Department of Moscow State University. His lectures have always been a success as they attracted many listeners who were inspired by his teaching. He worked actively with post-graduates and supervised four doctoral and five habilitation theses.

Professor Starzhinskii was a member of the Scientific-Methodical Council of Theoretical Mechanics of the Ministry of Education, the USSR, and a member of the Editorial Board of the Publishing House "Mir". He was among the active contributors to the Mathematical Encyclopedia.

V.M. Starzhinskii was rewarded with three medals of honor. In 1985, he received the reward "For Successes in the Field of Higher Education".

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