EDITORIAL

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Special issue on structural mechanics dedicated to the memory of Vladimir Yeliseyev (1947–2017)

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Prof. Vladimir Vasilyevich Yeliseyev (alternative spelling: Eliseev) used to live, work, and teach in St. Petersburg, Russia. Belonging to the famous school of Prof. Anatoliy Isaakovich Lurie at the Chair of Mechanics and Control of the Leningrad Polytechnic Institute, Vladimir Yeliseyev did his best at rethinking and further developing the heritage of his outstanding teacher. Strongly believing that mechanics is the most rewarding branch of physical and mathematical sciences, he generously shared his passion for mechanics with his own students. His passionate lectures, which he held at a high scientific level, clearly and rigorously presented the most challenging and modern questions of continuum and classical mechanics. Teaching, as well as applied and fundamental research of Prof. Yeliseyev, proved to be extremely efficient owing to the analytical technologies, which he developed to a high level of perfection [1–3]: mixed indexed and direct tensor notation, procedure of asymptotic splitting of equations for thin-walled and periodic structures, Lagrangian mechanics, and computational mathematics.

Among the scientific achievements of Prof. Yeliseyev, one should start with mentioning the modern versions of the linear and nonlinear theories of thin elastic rods, plates, and shells. For the first time ever, he systematically studied the asymptotic splitting of the three-dimensional equations of elasticity to a dimensionally reduced structural problem and to a problem in the cross section of a rod with a structure [4–6] or in the through-the-thickness element of a plate. He succeeded at developing geometrically nonlinear equations in a compact tensorial form based on the principle of virtual work, applied for material lines [7] and surfaces [8, 9]. Proving important fundamental theorems, obtaining equations in the incremental form [8] and finding several novel solutions to particular problems [10, 11], he contributed to raising the linear and nonlin-

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ear mechanics of thin-walled structures from the level of technical theories towards an established branch of continuum mechanics. His bright thinking and advanced techniques of analysis allowed him to obtain novel results related to composites and fracture [12], magneto- and electroelasticity [6], fluid–structure interaction [13], rotor dynamics [14], contact problems [15], dynamics and stability of axially moving material structures [16], and many others. Colleagues of Prof. Yeliseyev made a collection of his printed works available at <https://yadi.sk/d/WwRaJCMF3P4Fo4>.

The present volume of *Acta Mechanica* contains outstanding contributions on various aspects of structural mechanics. Many of them feature structural theories in the form developed by Prof. Yeliseyev, or are closely related to his research. We are hoping that this special issue will further attract attention to his bright scientific heritage.

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