## Branko Dragovich

President of the Serbian Academy of Nonlinear Sciences (SANS).

B. Dragovich was born on March 11, 1945 in Sonković (Šibenik, Yugoslavia).

**Education.** He finished elementary school in Skradin in 1959 and high school in Šibenik in 1963. At the Faculty of Science and Mathematics of the University of Belgrade: graduated in physics in 1967, master's degree in theoretical physics in 1973 and doctorate in mathematical physics in 1977. During his studies, he received a scholarship from the Republic of Serbia. He speaks Serbian, Russian and English, and uses French. Since 1964 lives in Belgrade.

**Employment and research visits**. Employed at the Institute of Physics, Belgrade, since January 1, 1970 until retirement on 11.03.2012. Research professor since 1994. Spent the whole 1976 year on scientific training at the Joint Institute for Nuclear Research, Dubna, Russia. He worked as a leading scientific associate in 2000-2 at the Steklov Mathematical Institute of the Russian Academy of Sciences, Moscow. About 100 times he visited various foreign institutions in physics and mathematics, including CERN in Geneva and the International Center for Theoretical Physics in Trieste, and lectured at their seminars.

**Fields of scientific research.** He researched various problems of theoretical and mathematical physics, especially in the areas: quantum field theory, foundation of quantum mechanics, string theory, gravity, cosmology, development and application of new mathematical methods, genetic code and bioinformation. He was particularly involved in the development and application of p-adic and adelic analysis in the modeling of physical and biological systems. He is one of the founders of p-adic mathematical physics.

**Organizational work**. B. Dragovich was the director of the Center for Theoretical Physics in 1978-1985 in the Institute of Physics. Since 2009 is the deputy editor-in-chief of the international multidisciplinary journal in English "p-Adic Numbers, Ultrametric Analysis and Applications", founded by the Russian Academy of Sciences (2008), and published by Nauka (Pleiades) and Springer. He was a reviewer in more than 30 international journals. He was guest editor of three special issues in Symmetry journal. He is the editor of over 30 proceedings of scientific conferences in English and Serbian. He participated in more than 150 international scientific meetings, mostly by invitation. He was the organizer or co-organizer of over 60 scientific meetings, most of which were international. He is the main organizer of a series of 10 international conferences on modern mathematical physics that were held in Serbia. He is also one of the main organizers of the series of scientific conferences in p-adic mathematical physics and the Belgrade Bioinformatics Conferences (BelBi 2016, 2018, 2021, 2023). He managed scientific projects in Serbia, and international scientific research projects of Serbia with Russia and France. He significantly improved scientific cooperation between mathematicians and theoretical physicists in Serbia.

**Pedagogical work**. As a full professor, he taught at the Faculty of Science in Banja Luka from 1998 to 2013: elementary particle physics, quantum field theory, astrophysics,

gravitation and cosmology. He also taught at the Universities of Belgrade, Niš and Priština. He also held special courses in p-adic mathematical physics in Sweden, China and South Korea. He supervised 5 doctoral dissertations, 5 master's theses and several graduate theses.

**Recognitions and awards**. In 1981, on the occasion of the 20th anniversary of the Institute of Physics in Belgrade, the Council of the Institute granted Charter B. Dragovich for his contribution to the development of the Institute. He twice received the prize of the Institute of Physics for scientific work, namely: for research in quantum electrodynamics and p-adic mathematical physics. Proceedings of two international conferences (Belgrade, 2005 and 2015) in p-adic mathematical physics are dedicated to B. Dragovich on the occasion of his 60th and 70th birthdays. He is a member of the "Serbian Academy of Nonlinear Sciences" association and has been its president since 2018. He was a regular member of the South Slovenian Academy of Nonlinear Sciences since 2009 and its president 2014-2018. He is also one of the founders and the first president (2018-2022) of the "Serbian Society for Bioinformatics and Computational Biology".

**Main research problems and results**. Most of the problems that B. Dragovich investigated are related to nonlinear theories (gravity theory and string theory). Among the most important results he obtained are: 1) demonstrated the impossibility of electromagnetic generation of electron mass within finite quantum electrodynamics; 2) founded adelic quantum mechanics and applied it to the ground quantum state of the early universe and obtained the discreteness of space-time on the Planck scale; 3) introduced and elaborated a class of p-adic functional series whose sums are rational numbers for rational values of the argument; 4) was the first to introduce p-adic modeling of the genetic code; 5) constructed several Lagrangians with the Riemannian zeta function for the collective dynamics of p-adic strings; 6) with collaborators introduced a simple model of non-local modification of Einstein's theory of gravity and obtained a cosmological solution containing effects attributed to dark energy and dark matter. He has published over 170 peer-reviewed scientific papers in international journals and conference proceedings in the field of physical, mathematical and biological sciences, which have been cited over 2700 times (Google Scholar, h-index)

More detailed information can be found on the websites: http://mail.ipb.ac.rs/~dragovich/, https://scholar.google.com/citations?user=xbC5-R0AAAAJ&hl=en, https://www.mathnet.ru/eng/person19407 .

**Five selected papers**.
[1] B. Dragovich, *Adelic harmonic oscillator*, Int. J. Mod. Phys. A**10** (1995) 2349, arXiv:hep-th/0404160,  https://doi.org/10.1142/S0217751X95001145.
[2] B.G. Dragović, *p-Adic perturbation series and adelic summability*, Phys. Lett. B **256**(1991)392, https://doi.org/10.1016/0370-2693(91)91780-Y..
[3] G. S. Djordjević, B. Dragovich, Lj. D. Nešić and I. V. Volovich,  *p-Adic and adelic minisuperspace quantum cosmology*, Int. J. Mod. Phys. A**17** (2002)1413, arXiv:gr-qc/0105050, https://doi.org/10.1142/S0217751X02009734.
[4] B. Dragovich and N. Ž. Mišić, *p-Adic hierarchical properties of the genetic code*, BioSystems **185** (2019)104017, https://doi.org/10.1016/j.biosystems.2019.104017.
[5] I. Dimitrijevic, B. Dragovich, Z. Rakic and J. Stankovic, *Nonlocal de Sitter gravity and its exact cosmological solutions*, JHEP **12** (2022) 054, https://doi.org/10.1007/JHEP12(2022)054,   arXiv:2206.13515 [gr-qc].

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