



EDITORIAL



This issue of *Advances in Group Theory and Applications* is dedicated to Prof. Dr. Leonid A. Kurdachenko, one of the most active group theorists, who celebrated his 70th birthday on October 22nd, 2019.

Leonid's input in the development of some areas of modern algebra is quite significant. He is the author of more than 270 scientific papers published in major international mathematical journals, and wrote more than a dozen of books

published by prestigious publishing houses. Moreover, Leonid is a very valued invited speaker in many international conferences and visiting professor in several famous universities. He supervised 9 Ph.D. students and a D.Sc. student who actively work in the field of algebra.

Leonid Kurdachenko was born in Dnipro (Dnipropetrovsk until 2016) on October 22nd, 1949, and in 1971 he graduated with high honors from the Mechanics and Mathematics School of National Dnipro University. He met Sergey N. Černikov in 1969, and in 1971 Leonid became a postgraduate student of him. In 1974, Leonid was awarded his Ph.D. degree and began his career as an assistant professor at the Department of Algebra and Geometry of Dnipro University. Two years later, he became an associate professor, and in 1977 the Department Chair. Leonid defended his Doctor of Sciences dissertation at St. Petersburg University in 1992, and he has been also

awarded a Doctor of Sciences Degree by Kiev University. Since 1996, Leonid Kurdachenko is a Full Professor and Chair of the Department of Algebra and Geometry of National Dnipro University. In 1998, he was awarded by the honorary title *Distinguished Scientist of Ukraine*.

A partial list of Leonid Kurdachenko's areas of research, where he gave outstanding contribution, includes the following topics: restrictions on conjugacy classes, weak minimal and maximal conditions on relevant systems of subgroups, modules over group rings and linear groups, rank conditions, transitivity of embedding properties, generalizations of the so called "Schur theorem" and related results, fuzzy groups, Leibniz algebras (in the spirit of applying group theoretical methods).

Leonid wrote papers with 50 co-authors. Among many other results, he proved some broad generalizations of classical theorems of I. Schur and B.H. Neumann (jointly with S. Franciosi and F. de Giovanni); he worked with V.E. Goretskii, G. Cutolo, H. Smith, I.Ya. Subbotin, L.S. Kazarin, P. Shumyatskii and others on groups satisfying the weak maximal and minimal conditions; jointly with I.Ya. Subbotin, J. Otal, A. Russo, G. Vincenzi and others, he was able to describe some important properties of pronormal, Carter, abnormal, and contranormal subgroups of infinite groups and investigate their influence on the group structure; in collaboration with A. Ballester-Boliches and T. Pedraza, he wrote a series of interesting papers dedicated to properties of permutable and Sylow-permutable subgroups in infinite periodic groups.

One of the most investigated problems in group theory is the study of influence of factor groups on the structure of a group. The papers of Leonid and his co-authors (I.Ya. Subbotin, J. Otal, S. Franciosi, F. de Giovanni, V.V. Pylaev) play an important role here. His book "Groups with Prescribed Quotient Groups and Associated Module Theory" (jointly written with J. Otal and I.Ya. Subbotin) collected and presented the main results of these studies from a single general point of view.

Modules over group rings were efficiently used by Leonid Kurdachenko in many group theoretical studies, and these methods have been presented in the book "Artinian Modules over Group Rings", that he wrote with J. Otal and I.Ya. Subbotin.

One of the recent areas of investigation of Leonid is that of infinite-dimensional linear groups. While the theory of linear groups of finite dimension is one of the most developed algebraic topics, in the case

of infinite-dimensionality the situation is totally different. Leonid offered an efficient approach to the study of such groups based on the promising concept of central dimension. Jointly with M.J. Evans, M.R. Dixon, I.Ya. Subbotin, J. Otal, J-M. Munos-Escolano, O.Yu. Dashkova and N.N. Semko, he wrote a quite impressive number of papers on infinite-dimensional linear groups. The results of these papers and some further contribution to the investigation of infinite-dimensional linear groups related to the concept of G -normality can be found in the book "Linear Groups: the Accent on Infinite Dimensionality", that he wrote very recently with M.R. Dixon and I.Ya. Subbotin.

The most recent interest of Leonid Kurdachenko is in Leibniz algebras, for which he has been building a theory parallel to that of infinite groups.

Leonid Kurdachenko is also known as a great teacher. He published a couple of textbooks on algebra, which are actively used by American, Ukrainian and Chinese instructors in their algebra courses. His recent book "Ranks of Groups: the Tools, Characteristics, and Restrictions", jointly written with M.R. Dixon and I.Ya. Subbotin, was also used in some lecture courses for graduate students in USA and Italy.

Leonid has many friends and collaborators around the globe. He is a very friendly, honest and sharing person, great husband, father and grandfather. Moreover, he is a very energetic and enthusiastic mathematician with more achievements to come. His research activity grows every year, covering new areas of algebra. We warmly congratulate him on his 70th birthday and wish him many more successful years of research and teaching.

Francesco de Giovanni
Igor Ya. Subbotin