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INTERVIEWS WITH PROMINENT SERBIAN MATHEMATICIANS

Abstract. An informal project *Interviews with Serbian mathematicians* of the Mathematical institute of Serbian Academy of Sciences and Arts is described. Seven interviews are presented with prominent Serbian scientists who were working in mathematics and mathematically oriented sciences. The interviewer was the author of this article.

The Mathematical Institute of the Serbian Academy of Science and Arts started an informal project "Interviews with Serbian mathematicians" a decade ago. The project aims to film longer interviews with mathematicians of the older generation, in which they would present their life paths and views on their scientific discipline and their scientific creations and achievements. Therefore, each interview lasts about one to two hours and they are valuable documents on the history of Serbian mathematics since the fifties of the previous century.

Interviews are recorded in digital film form and are kept in a Mathematical institute and are not yet open to a wider audience. This paper aims to present interviews with seven distinguished Serbian scientists whose deeds were in mathematical sciences: Acad. Nikola Hajdin (1923 - 1919), Acad. Bogoljub Stanković (1924 - 2021), Prof. Veljko Vujičić (1929 - 2020), Prof. Koriolan Gilezan (1929 - 2023), Prof. Branka Alimpić, Prof. Nedeljko Parezanović and Prof. Zoran Marković. The interviewer was the author of this article.

Each of the interviewed scientists began the conversation with a description of their childhood and early school days. All of them, except Professor Zoran Marković, at that young age experienced World War II and all the hardships that came with it. There we heard many details from their lives that cannot otherwise be found in other publicly available biographies. That is why these interviews are not only interesting stories about a time, but also testimony about an important and difficult period in the history of Serbia told by witnesses of that time. Another important feature is that all participants approached the interviews honestly and very openly. We learned how they decided on the academic career they had, we heard details about the events in which they participated and played an important role, starting from the establishment and development of our significant academic and scientific institutions, faculties and seminars to the important functions they held in international organizations and institutions. On this occasion, we will not retell the interviews, as that would be a difficult, if not impossible undertaking. Instead, we present their biographies, enriched with details we learned from them in the interviews.

Academician Nikola Hajdin, (Vrbovsko, Croatia, 1923 - 2019), was a professor at Belgrade University and president of the Serbian Academy of Sciences and Arts (SASA).

Acad. Hajdin was a famous Serbian civil engineer. He was elected a corresponding member of SASA in 1970 and a full member in 1976. He was the vice-president of SASA from 1994 to 2003, and the president of SASA for three terms, 2003-2015. He is highly regarded as the author of a whole series of steel and concrete structures. Parts of these accomplishments are: Railway Bridge with inclined braces over the Sava River in Belgrade (with LJ. Jevtović, 1979); the road bridge of the girder system with diagonal braces over the Danube River in Novi Sad (1981); the "Glažnje" arch dam in Macedonia (1967) and a large cable-stayed bridge over the Vistula River in Poland.

He also dealt with non-linear dynamic problems of mechanics; in particular he studied the impact of vehicles on building structures. These works, mostly published in Switzerland, had a significant influence on the official recommendations for the design of bridges, especially bridge piers under impact in Switzerland. He was a professor at the Faculty of Civil Engineering in Belgrade. At the same faculty, he defended his doctorate in technical sciences in 1956. He was elected a scientific associate of the Faculty of Civil Engineering in 1958, an assistant professor in 1960, an associate professor in 1961, and a full professor in 1966. In addition, he was a visiting professor at the Federal University of Applied Sciences (ETN) in Zurich (1971 – 1973) and a visiting scientist of the Swiss Association for Steel Structures.

He held a number of scientific and professional positions in domestic and foreign societies. He was the president of the Yugoslav group of the International Association for Bridges and Civil Engineering (IABSE) and a member of the standing committee of that organization, the president of the Yugoslav Committee of the International Union for Theoretical and Applied Mechanics, the dean of the Faculty of Civil Engineering in Belgrade and the president of the Yugoslav Association of Civil Engineers. He was a foreign member of several academies - the Slovenian Academy of Sciences and Arts, the National Academy of Athens, the European Academy of Sciences, Arts and Letters based in Paris and the European Academy of Sciences in Liège.

He is the recipient of numerous recognitions and awards, among which are: October Award of Belgrade (1959); October Award of Novi Sad (1981); Award of AVNOJ (1987); First prize for a bridge project over the Vistula River in Plock, Poland (1996); Order of Merit for the People with a Golden Wreath (1987) and Plaque of St. George of the City of Kragujevac.

Academition Bogoljub Stanković (Botoš village, Zrenjanin county 1924 - 2018). He finished elementary school and high school in Novi Sad. The war found him in the sixth grade of high school. In June 1944, he was arrested by the Hungarian secret police and went through several camps in Hungary and Germany. He met the end of the war in the Dachau camp, where vivo experiments were performed on him. He graduated in mathematics at the Faculty of Philosophy in Belgrade in 1949. As a student, he participated in the construction of the Brčko-Banovići and Šamac-Sarajevo railways. In 1949, he was chosen as an assistant at the Mathematics Institute of SASA, where he received his doctorate in 1954. In the same year, the Faculty of Philosophy was founded in Novi Sad and moved there to the Department of Mathematics. He participated in the organization and teaching of the mathematics group since its foundation as well as its creation. He conducted studies at the III degree until his retirement.

 He founded and led a seminar in mathematical analysis for 48 years. Almost all teachers from that field went through that seminar. In 1959, he was elected associate professor, and in 1964, full professor. He retired in 1990. He was elected a corresponding member of the SASA in 1963, and a full member in 1972. He was a full member of the Vojvodina Academy of Sciences and Arts and the first president in 1979.

Academician B. Stanković held numerous positions at the university. He was head of the department of mathematics at his faculty, vice dean and dean of the faculty, director of the Institute of Mathematics at the Faculty of Science and Mathematics in Novi Sad, and rector of the University.

Academician Bogoljub Stanković participated by invitation in a large number of scientific gatherings: in Hungary, Poland, Bulgaria, Germany, Russia, India, Kuwait, Australia and Yugoslavia. During his scientific career, he participated in presentations at almost all World Congresses. He was a member of the Society of Mathematicians of Yugoslavia, a member of the American Mathematical Society and the Society of Serbian Mathematicians. He was a long-term member of the Executive Board of the Society of Mathematicians, Physicists and Astronomers of Yugoslavia. He held high positions in the Balkan Mathematical Union and the European Council for Mathematics.

In the period 1991 - 1995, he was the manager of the Mathematics Department of the Mathematics Institute of SASA. He was a member of the Educational and Cultural Council of the Federal Assembly, a delegate of Serbia at the session of the Inter-Parliamentary Union in Caracas and vice-president of the Presidency of the Conference of the Inter-Parliamentary Union at the session in Rome in 1974. He is the recipient of several domestic and foreign awards, including the AVNOJ Award, the Order of Brotherhood and Unity with golden wreath and Officier de l'ordere national de merite, Republique France. He was an honorary citizen of the American city of Baltimore.

Professor Veljko A. Vujičić (Nikšić, 1929 - 2020) was a professor of mechanics at the Faculty of Mathematics, and in addition to his successful pursuit of science, he held high administrative and political positions. He finished elementary school and high school in Nikšić. He graduated from the anti-aircraft military academy in Zadar, and then taught anti-aircraft shooting and engineering in Užice. He graduated in mechanics studies at PMF in 1957, master's degree in 1959, and PhD in 1961. During 1959-60 he was at the Faculty of Mechanics and Mathematics of the Moscow State University.

He was elected as an assistant at the Faculty of Natural Sciences and Mathematics of the University in Belgrade in 1959, an assistant professor in 1961, an associate professor in 1968, and was promoted to full professor in 1974. He taught various subjects in mechanics at the Faculty of Mechanical Engineering in Belgrade, as well as at the Faculty of Engineering in Titograd and the Faculty of Mining and Metallurgy in Kosovska Mitrovica. He led scientific seminars on Motion Stability, Motion Control Theory and Analytical Mechanics. He is the mentor of 18 master's and 8 doctoral theses. He wrote two university textbooks, and translated two from Russian. He published over 170 scientific papers and 4 monographs. He started publishing and edited for more than twenty years the scientific journal of the Yugoslav Society of Mechanics.

At the Faculty of Science and Mathematics in Belgrade he was the head of the Department of Mechanics, head of the Department of Mathematics, Mechanics and Astronomy and Dean of the Faculty; in the Mathematics Institute SASA: Head of the Department of Mechanics, deputy director, and director. He was the president of the Committee for Mathematics and Mechanics of Serbia, president of the Council of Natural and Technical Sciences; manager and researcher of the republic's projects in mechanics. He was the first president of the Society for Mechanics of Serbia and the president of the Board of Directors of the Yugoslav Society for Mechanics;

He was an honorary member of the Yugoslav Society of Mechanics, a member of several foreign and international scientific societies: a corresponding member of the American Academy of Mechanics (1994), a member of the International Academy of Nonlinear Sciences (1996) based in Moscow and a corresponding member of the European Academy of Sciences and Arts (1998) based in Paris.

In science, he dealt with the geometrization of the mechanics of objects of variable mass. It also has significant contributions in analytical dynamics. He expanded the number of independent differential equations of motion for rheonomic systems; introduced the concept of force, power and the potential of changing relationships; modified the relations of the "law" of energy change, Lagrange's and Hamilton's function, the central concepts of classical analytical mechanics. In the theory of oscillations and the theory of stability of motion, he introduced the General Invariant Criterion on the stability of motion of mechanical systems.

Professor Coriolan Gilezan (Ečka, 1929 - 2023) devoted his life to the development of mathematical science and profession and during his working life he taught at the Zrenjanin High School, at the Higher Pedagogical School and also worked at the Faculty of Technology in Novi Sad. He was a favorite professor of his pupils and students.

He graduated from the Faculty of Science and Mathematics in Belgrade in 1955. He was professor of mathematics at the gymnasium in Zrenjanin from 1956 to 1962, when he moved to teaching at the Higher Pedagogical School. He received his master's degree at the Faculty of Science and Mathematics in Belgrade in 1967, and defended his doctoral dissertation on some generalizations of pseudo-Boolean programming in 1971. He was elected as an assistant professor at the Faculty of Technology in Novi Sad in 1972 and as a full professor in 1982 at PMF in Novi Sad.

The main area of his scientific research was Boolean algebras and discrete mathematics. He is the co-author of the first book in Serbian in the field, Boolean algebra and applications (Bg 1977), which, due to its scope from theory to software and hardware applications in computing, had an impact on generations of students of computer science, engineering and mathematics. He is one of the pioneers of research into pseudo-Boolean programming and multi-valued logics. Together with S. Rudeanu, he derived an interpolation formula for discrete functions that covers canonical disjunctive and conjunctive normal forms and Post-Carvallo and Moisil interpolation forms.

He gave a new definition of partial derivatives of pseudo-Boolean functions and showed that any discrete function can be represented by them. He also deals with the differential calculus of generalized pseudo-Boolean functions and initiated the theory of partial differential equations for this class of functions. At the end of the 70s, he gave lectures on phase sets, thereby introducing this new field of mathematics in Serbia. Cited in the works of prominent mathematicians: I. Rosenberg, P. Hammer, F. Robert. His results are presented in the capital monographs of S. Rudeanu *Boolean Functions and Equations* (1974); *Lattice Functions and Equations* (2013).

Professor Branka Alimpić is an algebraist and retired associate professor at the Faculty of Mathematics in Belgrade. She significantly advanced and contributed to the study of the theory of quasi-groups and associated structures in Serbia.

Professor Alimpić was born in 1935 in Sremska Mitrovica. She finished elementary school in 1946 and high school in 1954 in Sremska Mitrovica. She studied mathematics at the Faculty of Sciences and mathematics in Belgrade from 1954 to 1959. At the same faculty, she defended her master's thesis in the field of geometry in 1965 under the title *Arrangement of projective space*, and in 1973 she defended her doctoral dissertation under the title *Isotopy of a class of quasigroups*, under led by prof. Dr. Slaviša Prešić. At the beginning of her career, during the school year 1959-60, she worked as a mathematics teacher at the Elementary School "Sonja Marinković" in Zemun. In 1960, she was elected as an assistant at the Department of Mathematics at the Faculty of Mathematics in Belgrade. She was elected as an assistant professor in 1974 and as an associate professor in 1983. She retired in 1995. The areas of her scientific and professional work are geometry and algebra.

She has published 18 scientific papers, 4 professional papers and 7 books (with co-authors), of which 4 are textbooks for high school, 2 collections of assignments for students and one handbook for high school teachers. It has been cited several times in the works of foreign mathematicians. Among others, it was cited in the well-known book by M. Petrich, Inverse semigroups, Wiley, New York, 1984. He is a contributor to the reference journal Mathematical Reviews. He is a member of the American Mathematical Society. She was the supervisor during the preparation of 3 doctoral dissertations.

Professor Nedeljko Parezanović (Ivanjica, 1932) is a mathematician and computer scientist, retired professor of the Faculty of Mathematics at the University of Belgrade, where he introduced modern computer science courses in regular and postgraduate studies. He has great merits for development of Computer science in Serbia.

He finished elementary school in Ivanjica, and high school in Belgrade. He graduated in 1957 from the Faculty of Science and Mathematics of the University of Belgrade in the group for mechanics. At the same faculty, he received his doctorate in 1961 under Professor Tadija Pejović. In the period 1950-1957 he worked in the studio of Radio Belgrade, and after graduating he moved to the Military Technical Institute of the JNA VTI in Belgrade. In 1959 he moved to the Institute of Nuclear Sciences "Vinča", and in 1961 he transferred to the Mihajlo Pupin Institute in Belgrade.

He began his university career as an associate professor at the Faculty of Electronics in Niš, and moved to the Faculty of Science and Mathematics in Belgrade in 1972. He was elected full professor at this faculty in 1980. He remained at this faculty until his retirement in 1997 with 46 years of service, of which 40 years were in the field of computing.

He was the manager of the computing center of the Mathematics Institute of SASA and the head of the Department of Computing and Informatics of the Faculty of Mathematics in Belgrade since its foundation. He wrote textbooks for his lectures, the most important of which were "Programming language Fortran IV" and "Fundamentals of computer systems". He was the mentor of several doctoral dissertations, including prominent scientists in this field as Vojislav Stojković (1981), Gordana Pavlović-Lažetić (1988), Ivan Obradović (1991), Duško Vitas (1993), Cvetana Krstev (1997), Sanja Petrović (1997) and others. He was the editor of the "Oxford Dictionary of Computing" (Mr. V. Illingworth, Dictionary of Computing, 1986), Publisher NOLIT, 482 pages, format 24, Belgrade, 1990.

He worked on the development of several domestic computers: HRS-100 "Cosmos" at the Mihajlo Pupin Institute in Belgrade in cooperation with the Institute for Automatics and Telemechanics from Moscow, CER-11 and CER-30 at the Mihajlo Pupin Institute in Belgrade and TRS 501 and TRS 511 for the needs of the TRS Computing Machine Factory in Zagreb.

Professor Zoran Marković, (Belgrade, 1948) is retired principal research fellow and professor of the Faculty of Mathematics in Belgrade and long-time director of the Mathematics Institute of SASA. In science, he dealt with mathematical logic.

He completed primary and secondary school in Belgrade and graduated mathematics at the Faculty of Science and Mathematics in Belgrade in 1971. He completed postgraduate studies in Mathematical Logic in 1974 at the same faculty. He received his doctorate in 1979 at the University of Pennsylvania, in Philadelphia, USA. Since 1972, he had been employed at the Mathematics Institute in Belgrade. In 1980, he was elected a scientific associate. He spent three academic years at the University of Pennsylvania, in Philadelphia, USA (1975-1979) and one academic year at the University of California, in Berkeley as Visiting Assistant Professor.

In 1986, he was elected as an assistant professor at the Faculty of Mathematics in Belgrade, and in 1989 as an associate professor. From 1985, he led the Mathematics Institute of SASA in the capacity of director for the next 30 years. In 1992/93, he was on a study stay in Amsterdam and Athens.

In the late 180s, he managed projects in artificial intelligence and cryptographic systems. The main scientific field of interest of professor Marković is mathematical logic and its applications. In the field of applied logic, he is one of the leaders of the world recognized group of logicians from Belgrade, which works very successfully in the field of probabilistic and default logic. Dr. Marković's scientific contribution resonated both abroad and in our country, which can be seen from the number of citations in foreign and domestic publications, the number of invitations from universities and scientific institutions, and invited lectures at conferences.

In addition to his scientific work, professor Marković as director managed very successfully the Mathematical Institute. In that period, on projects in mathematics, mechanics and computer science, he gathered the largest part of the productive mathematical intelligence of Serbia, whose number of collaborators ranged from 300 to 450. Thanks to him, the Mathematical Institute modernized the organization of scientific work and administrative and technical support. Dr. Zoran Marković has great merits for the affirmation of mathematical, mechanical and computer sciences, as well as the Mathematical Institute, in the Ministry of Science of Serbia, SASA and other scientific institutions. He directly participated in the creation of criteria for the assessment and evaluation of scientific work in the Ministry of Sciences of Serbia.

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