

**IN MEMORIAM
RADIVOJ PETROVIĆ (1933-2022)**



Radivoj Petrović was born in 1933 in Zenica, where his parents, educators from Belgrade, were sent by the decision of the government. His mother Smilja was a teacher, and his father Ilija was a professor of mathematics at the high school. He would be later the director of the First High School in Belgrade. Ilija was talented mathematician, one of the best students of the great Serbian and in that time the world recognized mathematician Mihailo Petrović Alas.

Radivoj completed the primary and the secondary school in Belgrade where his family moved very soon after his birth. From his earliest childhood, he showed a mathematical talent, inherited probably from the parents. This gift of nature facilitated him demanding studies at the Faculty of Electrical Engineering, which he enrolled in 1952 with the maximum scores of 100 points in mathematics and physics at the university entrance exams. He graduated in 1957 as an excellent student.

Radivoj started his professional career as a Research Associate with the Institute for Nuclear Sciences Vinča, Belgrade, in the Laboratory for Physics. As an electrical engineer, he worked, very successfully, on the development of new measuring instruments and systems. At

the same time, he continued his postgraduate and doctoral studies also at the Faculty of Electrical Engineering. He completed them in 1961 and 1964, respectively. Both, M.Sc. and Ph.D. these were devoted to the problems in the optimal control theory and computer applications in solving optimization tasks. The topic was a modern dynamic optimization based on the principle of maximum and dynamic programming as an avant-garde theme in the system science in the sixth decade of the XX century.

After two years spent in the Laboratory for Physics, he moved to the newly founded Mathematics and computer laboratory, where he constructed a signal multiplier as a part of the analog computer whose production was a strategic laboratory project. His method would later find its place in the famous "Handbook of Computers", McGraw-Hill, 1972.

In 1962, Radivoj joined the "Mihajlo Pupin" Institute, (IMP), first as a Research Associate. He was later appointed to the Head of Automation Laboratory, 1965 - 1972. He also served as a scientific advisor in the Operational Research Department within the Automation Laboratory in IMP until 1980. Starting from the 1980s he acted as an Associated Director of IMP, responsible for scientific activities. In the period 1990-2000 he was engaged as the Full Professor at the Faculty of Traffic and Transportation in Belgrade, where he was the Head of Cybernetics Department, lecturing courses in Logistics and System Science.

Radivoj was an initiator and manager of several important and strategic programs and projects in the IMP and at the Faculty of Traffic and Transportation. However, I will point out only some contributions to the development of operational research in Yugoslavia and Serbia.

As the Head of Automation Laboratory, Radivoj, together with prof. Vlastimir Matejić, founded the OR Department, which for many years played a key role in the activities of operational researchers in Yugoslavia. The idea and decision to organize a national conference on operational research were made in the OR Department in IMP. Radivoj was the president of the Organizing Committee of the First Yugoslav Operational Research Conference, (SYM-OP-IS, SYMposium OPERacionih ISTraživanja) in 1974. He would later be a permanent member of the Program Committee of SYM-OP-IS and acted several times, formally or informally, the role of the president of the Program Committee.

SYM-OP-IS's were not only a review of domestic annual achievements in the field of operational research, but also a good opportunity to meet well-known world and European names in the field. The participants of SYM-OP-IS had the opportunity almost every year to see and hear the best people in operational research from all over the world and discuss with them the most current topics and problems in that field. Almost all of these distinguished guests were invited by Radivoj.

On the basis of the activities within SYM-OP-IS, Radivoj registered in 1981 the Section of Operational Research, as a part of ETAN (Yugoslav Association for Electronics, Telecommunications, Automatics and Nuclear engineering). He played also a key role in the admission of Yugoslavia to IFORS-EURO in 1981. He was the Yugoslav representative in these organizations for almost two decades. He was also the member and the president of the Jury for EURO Gold Medal for the best European achievements in Operations Research in the period 1990-1992.

Thanks in large part to Radivoj, during the 1980s and even later, Yugoslavia was a very active member of IFORS-EURO in the period from the 1980s until today. Yugoslav operational researchers were the host of the X European EURO Conference held in Belgrade in 1989, and of two international Mini-Euro conferences during the nineties. Radivoj played the key role in organizing these conferences.

As it is well-known, EURO was the organizer and promoter of regular EURO Summer/Winter Institutes. Every year, these schools brought together 25-30 young operational researchers from European countries who, for a period of two or three weeks, would listen to

lectures by eminent world professors. Thanks to Radivoj, almost every year our country sent one good representative of young operational researchers to participate the institute.

When the Balkan gatherings of operational researchers began in the mid-nineties, Radivoj played a very important role in the organization and implementation of the BALKAN Conferences for Operational Research (BALCOR), especially the first ones, held in Thessaloniki in 1993 and 1995, where Radivoj was a member of the Conference Organizational and Program Committees. In his plenary speech at BALCOR 1993 in Thessaloniki, Petrović talks about the perspective of operational research especially in artificial intelligence, combinatorial analysis, fuzzy sets and multi-criteria optimization. At the plenary speech at BALCOR 1995, also in Thessaloniki, Radivoj talks about the medium-term perspective of operational research from the point of view of application. His prediction was that the OR application would extend especially to communications, ecology, production engineering, energy, traffic and transport, healthcare and medicine.

The Program committee of XV SYM-OP-IS 1989 made decision to establish a new national OR journal. Three doyens of OR in Yugoslavia, prof. Radoslav Stanojević, prof. Jovan Petrić and prof. Radivoj Petrović dedicated themselves to perform this task. In order to attract top world experts to the Editorial Board of the journal, Radivoj held many conversations with famous operational researchers such as Jean Pier Brans from Brussels, Reiner Burkard from Graz, Vladimir Burkov from Moscow, Pierre Hansen from Montreal, Jakob Krarup from Copenhagen, Costas Pappis from Athens, Bernard Roy from Paris, Dominique de Werra from Lausanne and others. All of them accepted to be members of the Editorial Board. The first issue of Yugoslav Journal of Operations Research (YUJOR) was published in 1991. This eminent Editorial Board gave YUJOR at the start a good position among operational research journals.

Immediately after obtaining his PhD, Radivoj took an active role in Postgraduates courses on Optimization and Operations Research at various faculties, not only at the Belgrade University, but also at universities in Zagreb, Ljubljana, Sarajevo and Skopje. He was mentor of more than ten doctoral dissertation.

Radivoj received many acknowledgements and awards among them I point out the following four important national ones: (1) Award of the City of Belgrade, 1978, for the best book in the scientific domain, entitled "Special methods of optimization", published by "Technical Book", Belgrade; (2) Annual Award of the Republic of Serbia, 1984, for general scientific achievements in development and application of optimization theory; (3) The Charter of SYM-OP-IS, 1986, for the development of Operational Research in Yugoslavia; (4), The Charter "Academic prof. Ljubomir Klerić", 2013, given by Academy of Engineering Science of Serbia, for outstanding life's work in the field of system science and engineering.

Many projects which were initiated by Radivoj last and continue their life: XLIX SYM-OP-IS 2022; YUJOR Vol. 32; XIII BALCOR 2018; Serbian Operational Research Society DOPIS as the member of EURO and IFORS; and so on.

Radivoj and his wife Nadja, PhD in biology, had two daughters, twins Dobrila and Sanja. Sanja got her PhD at the Faculty of Mathematics, University of Belgrade, and Dobrila her PhD at Coventry University, England. They are today distinguished university professors in United Kingdom, lecturing Operational Research or courses closely related to Operational Research. They are also active members of British OR society, where Sanja, for example, was chair of the 53OR, UK Operational research conference. Dobrila's children, as the fourth generation after Radivoj's father Ilija, have also mathematical talents: Fema finished master studies in mathematics, and Adrian will do the same, surely.

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