



## **In memoriam: Ioan I Vrabie**

**Ovidiu Carja**

On December 2017, our colleague and friend Ioan I. Vrabie passed away. From now on he will stay on the table of shadows. Professor Ioan Vrabie had been a member of the Editorial Board of *Libertas Mathematica* and had been supporting the journal with devotion. Born February 1951 in Iasi, Romania, he followed the primary and the secondary school classes in the same town.. When he was a student at the Faculty of mathematics of the University of Iasi, he was already considered among his schoolmates as a promising researcher publishing two papers in mathematical journals. He gained his doctorate in 1980 under the guidance of Professor Viorel Barbu, member of the Romanian Academy. After graduation, he was appointed as teacher at a high school in Iasi. Since 1979 he occupied positions in Academia, and starting with 1992 he was a Professor at Al. I Cuza University of Iasi. From 2001 he was also appointed as researcher at the Octav Mayer Mathematical Institute of the Romanian Academy. In addition to his position as professor and researcher, he

served as vice-dean of the faculty of mathematics from 1996 till 2000.

Professor Vrabie was an outstanding researcher in mathematics, his main field of interest being nonlinear analysis and applications to differential equations in Banach spaces. Some specific topics include: compactness of the solution operator, viability and invariance, differential equations with measures, evolutions equations with nonlocal initial conditions, nonlinear delay differential inclusions, control problems, identification problems.. His results have been published in more than 100 scientific papers and have been cited in more than 1800 works, many of them being included in monographs. His h-index is 23. The teaching activity of Professor Ioan Vrabie was centered on Differential Equations. He was also a very good teacher of Logic and the sets theory, Semigroups of linear operators and applications, Nonlinear Analysis. His didactic experience was synthesized in an excellent book, *Differential Equations. An introduction to basic results, concepts and applications*, written first in Romanian in 1999 and then translated and published with World Scientific in two more editions (2004 and 2011). From the back cover: “This book presents, in a unitary frame and from a new perspective, the main concepts and results of one of the most fascinating branches of modern mathematics, namely differential equations, and offers the reader another point of view concerning a possible way to approach the problems of existence, uniqueness, approximation, and continuation of the solutions to a Cauchy problem. In addition, it contains simple introductions to some topics which are not usually included in classical textbooks: the exponential formula, conservation laws, generalized solutions, Caratheodory solutions, differential inclusions, variational inequalities, viability, invariance, and gradient systems”.

Professor Vrabie was a talented scientific writer and author. He authored or co-authored at least 10 books and monographs, among them the most famous being *Compactness methods for nonlinear evolutions*, Pitman Monographs and Surveys in Pure and Applied Mathematics, in two editions (1987 and 1995). I have had the privilege to be co-author on the book *Viability, Invariance and Applications*, Elsevier, 2007. Professor Ioan Vrabie was also Editor of two Proceedings.

Let us mentioned a few honours that Ioan Vrabie received. He was visiting professor at University of Trieste, Complutense University of Madrid, University of Jyvaskyla, Ohio University, University of Milan. He was invited to give lectures and courses for doctoral students in Varsaw, Trieste, Berlin, Bayreuth, Florence, Constantz, Madrid, Athens (Ohio), Evanston, Milan. At the University of Iasi, he was supervisor of nine doctors in Mathematics. Among the prizes he won are the "Gh. Titeica" Prize of the Romanian Academy in 1983 and the First Prize of the Balkan mathematical competition of young mathematicians in 1980. Professor Vrabie won, by competition, many national research grants. He was also member of a Marie Curie Initial Training Network, 2008-2010. In addition to this, with a

large scientific and philosophical culture, he also had an encyclopedic knowledge of literature and music, he had a solid and subtle sense of humour even in serious situations. Ioan Vrabie was a very generous teacher, researcher and human being and was a model of the sense of duty; he will be greatly missed by his students, collaborators and friends.

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