PROFESSOR ION PĂVĂLOIU AT HIS 75th ANNIVERSARY

In 2009, the issue 2 of the present journal has been dedicated to prof. Ion Păvăloiu on the occasion of his 70th anniversary. Last year he has turned 75, and it is time to celebrate him again. In this article we complete the information mentioned there.

Professor Ion Păvăloiu was born on November 2, 1939, in Drăguţeşti, Gorj county. He followed the primary school in his village, and he graduated the "Tudor Vladimirescu" High School, Târgu Jiu, in 1956. In 1962 he graduated the Faculty of Mathematics, "Babeş-Bolyai" University, Cluj-Napoca. During the courses he was an active student, with concerns beyond the taught courses. He attended several scientific meetings, where he presented different communications. In 1962 he received an award at the National Scientific Session of Students, for a result on an optimum problem regarding the movement of the material point in one variable.

He was remarked by acad. T. Popoviciu as an outstanding student, hard-worker, with inclination and aptitude for the scientific research. Therefore, in 1962, when he graduated, he was appointed as a researcher at the Institute of Numerical Analysis (in Romanian, "Institutul de Calcul"), institute founded in 1951 and led at that time by the eminent academician.

Afterwards, prof. I. Păvăloiu spent his scientific life in the middle of the main events of the Institute. Let us recall that acad. Tiberiu Popoviciu is the most influential mathematician who lived and worked in Cluj-Napoca. As acknowledged by authoritative personalities[1] "he is the greatest mathematician given by Transylvania[/Ardeal], after J. Bolyai".

He is considered as the founder of Numerical Analysis School of our country.[2]

Under the direction of T. Popoviciu, two competitive electronic computers were designed and made at the Institute (DACICC-1 and DACICC-200, among the first computers in our country; by that time, there were only eight countries designing and making computers). These computers were used to solve either practical problems from economy, or different problems from Numerical Analysis.

I. Păvăloiu had the opportunity to set his grounds for his career as a true numerical analyst. He learned to set and use mathematical models for different

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[1] C. Iacob, *Academician Professor Tiberiu Popoviciu (1906–1975)*. Gaz. Mat. Ser. A, **80** (1975) no. 12, 451–453 (in Romanian).

[2] M. Nicolescu, G. Pic, D.V. Ionescu, E. Gergely, L. Németi, L. Bal, F. Radó, *The mathematical activity of Professor Tiberiu Popoviciu - on his 50-th birthday anniversary*, Stud. Cerc. Mat. (Cluj), Acad. RPR Filiala Cluj, **VIII** (1957) nos. 1-2, pp. 7–19 (in Romanian).

problems coming from the economy. Then he wrote programs (for the beginning, in machine language) and then debug and run programs to completely solve the problems. We mention that he was Project Leader for 20 research contracts with industrial enterprises at that time. Among them, we mention contracts with the Metallurgic Plant in Cugir, in Romanian "Uzinele Metalurgice Cugir" (for the design of different tools), with the Enterprise for Nitrous Fertilizers, in Romanian "Combinatul de Ingrăşăminte Azotoase" from Târgu-Mureş (for the computation of the result of some chemical reactions), "Institute for Food Research", in Romanian "Institutul de Cercetări Alimentare Bucureşti" (for the computation of the optimal harvesting/processing of the sugar beet; this was a very important contract, since the planning, harvesting and processing of the whole sugar beet in our country was modelled as a mathematical problem - optimization - and solved to bring significant economical benefits, of orders of several million dollars), and many others. The cumulated benefits of the contracts are over ten million dollars, as the archived documents show.

By the beginning of the seventies, the Institute attained its full development. The results of Popoviciu and his collaborators were acknowledged by the mathematical community, and 6 international conferences were organized at the Institute, attended by some of the most eminent mathematicians at that time from Romania (e.g., M. Nicolescu, G. Moisil, C. Foiaş, and others) and from abroad (P. Erdős, I. Schoenberg, S.M. Nikolski, J. Dieudonné, I. Babuška, A.M. Ostrowski, etc.).

The mathematical results of I. Păvăloiu were presented and debated at the most elevated level, receiving positive appreciations. He has also attended two international meetings of that time, in 1969 at Oberwolfach, and in 1970 at Budapest as well as some international meetings organized in our country.
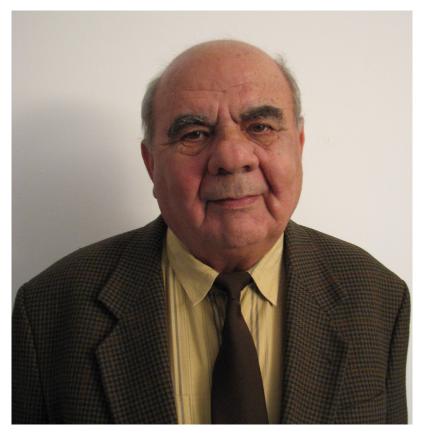
In 1971 he defended the Ph.D. Thesis, entitled *Contributions to the study of rapid convergent iterative methods, applied to solving operatorial equations*, having acad. T. Popoviciu as supervisor. In his thesis be studied and extended the inverse interpolatory methods to Banach spaces, achieving a unitary treatment of a class of rapid convergent iterative methods. He was successively promoted during the time, up to Scientific Researcher I, in 1991.

In 1975, in "a momentary lapse of reason", the communist president N. Ceauşescu dissolved the Institute (along with the similar ones from Bucharest and Iaşi). From nearly 50 employees, only 7 researchers remained, who formed a group within the Faculty of Mathematics from the "Babeş-Bolyai" University. During the period 1975-1990, dr. I. Păvăloiu was in charge for directing the activity of the group. In 1990 the group was transferred to the Romanian Academy, and formed the nucleus of the Institute, which started a period of development.

During 1990-2008, prof. I. Păvăloiu was the Head of the Institute, and he guided it with wisdom, skill and professionalism. Numerous young researchers

were formed as researchers in Numerical Analysis at the Institute Seminar, in an atmosphere of correctness, stimulation and rightness.

Dr. I. Păvăloiu has published over 100 scientific papers in prestigious journals from our country and from abroad (including journals indexed by Thomson-Reuters), and four books at different publishing houses from our country. The main topics of research approached by prof. I. Păvăloiu during almost 51 years of research within "T. Popoviciu" Institute of Numerical Analysis consist of: extensions of divided difference formulas to Banach spaces, applications to inverse interpolation methods; determination of methods with highest convergence orders within a given class; study of methods having optimal efficiency index; iterative methods for operator equations in Banach spaces; generalization of Aitken-Steffensen type methods with controlled nodes, obtained by inverse interpolation, with the study of their convergence; stability of numerical methods and estimation of errors.

Professor Ion Păvăloiu

The results obtained by dr. Ion Păvăloiu have been positively reviewed in the reviews journals. The Institute has set up a comprehensive web page for

his former Head (`http://www.ictp.acad.ro/pavaloiu`), containing all his papers. Despite some of the works have obtained long ago, they are still well appreciated, as one can see on Păvăloiu's "google scholar" and "ResearchGate" profiles. We mention that he is still an active researcher, elaborating new results, and working on a new book to be published.

He has recently collaborated within the Institute for the realization of 10 grants with the Romanian Academy and Ministry for Education and Research. He has organized the bi-annual symposiums *Academic Days of Cluj-Napoca* (in Romanian *Zilele Academice Clujene*) and he has also had an important contribution to the organizing in 2008 of the Institute Semicentennial. He was a member of the organizing committees of some international conferences at the North University Baia-Mare (CAIM).

Besides the scientific and management activity, prof. I. Păvăloiu has also performed a rich didactic activity. He taught mathematical courses at "Babeş-Bolyai" University, Technical University, "Avram Iancu" University (all in Cluj-Napoca) and North University of Baia Mare. In 1998 he was appointed as full professor at North University of Baia Mare (as cumulated job), and in 1999 he was appointed as doctoral supervisor at the same university, where he supervised 8 PhD students.

He is a member of the Editorial Board of the following journals: *Journal of Numerical Analysis and Approximation Theory* (Editor-In-Chief 1992-2001, Deputy Editor-In-Chief 2002-present), *SouthWest Journal of Pure and Applied Mathematics* (1996-2004), *Mathematica (Cluj)* (1990-2004), *Carpathian Journal* (since 2008), *Creative Mathematics and Informatics* (since 2008), *Researches on Numerical Methods of Analysis and Optimization* (1991–1997?).

In 1970 he was awarded the most prestigious mathematical prize in our country—"Gheorghe Lazăr" Prize of the Romanian Academy—while in 2010 he received an "Excellency Diploma for Remarkable Results in Mathematics", from Romanian Academy, Cluj-Napoca Branch. He has also received, in 2009, the "Distiction for Excellence", awarded by the North University Baia-Mare.

Aware of his important role in the development of the Institute, and grateful for his efforts in guiding young researchers (including the first author), as well as a wise and witty colleague, we wish him healthy and prosperous years to come!

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