

HOMAGE TO PROFESSOR ADELINA GEORGESCU AT THE AGE OF 65

Mitrofan Ciobanu; Anca-Veronica Ion

Professor Adelina Georgescu, the founder and the President of Romanian Society of Applied and Industrial Mathematics - ROMAI, reached, in the spring of 2007, the age of 65. This is a good opportunity for us, her collaborators and friends, to stop a little on our own mathematical and personal paths and to bring once more into light her life and activity up to this moment.



Mitrofan Ciobanu and Adelina Georgescu at Tiraspol State University,
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She was born in Drobeta Turnu-Severin on April 25, 1942 in a family of intellectuals (her mother, Maria Berindei, was a teacher of history and geography and her father, Constantin Georgescu, was an advocate). She finished the lyceum with excellent results and in 1960 she began the university studies, at the Faculty of Mathematics and Mechanics of the University of Bucharest. In 1965 she successfully defended her graduation thesis of the bachelor degree. After graduation she started to work at the Institute of Fluid Mechanics and Aerospace Constructions of the Romanian Academy. The theory of hydrodynamic stability was the first domain of research of Adelina Georgescu. This theory is mostly known to engineers, meteorologists, hydrologists, physicists. One of the still unsolved great problems of physics of fluids is the problem of the birth of turbulence, which is related to the loss of stability.

Between 1965 and 1990 Professor Georgescu worked at the Institute of Fluid Mechanics and Aerospace Constructions, Bucharest, and at the Institute of Mathematics, Bucharest, alternatively, first as a scientific researcher and then as a main and senior researcher.

In 1970, at the Institute of Mathematics of Romanian Academy, Adelina Georgescu defended her PhD thesis on linear hydrodynamic stability under the supervision of the Academician Caius Iacob, one of the leaders of the Romanian School of Mechanics, and she became a Doctor in Mathematics.

In 1976 Professor A. Georgescu published the first Romanian monograph on hydrodynamic stability. In 1985 Kluwer published its enlarged and improved English version. The 1985 version of the book somehow is a bridge between the classical theory, addressed mainly to engineers, and the pure mathematical ones which looks like an applied functional analysis. This monograph was cited

by many authors, since it was widely used as an university textbook and by researchers, being a pioneer work in this field.

After 1985 the theory of the hydrodynamic stability evolved very much and the spectrum of scientific interests of Professor A. Georgescu became very broad. It includes the following areas: the stability and the multiparametric bifurcation in fluid dynamics, spectral problems for ODE in the hydrodynamic stability theory, dynamical systems associated with fluid flows, a transition to turbulence as a deterministic chaos, fractals, models of asymptotic approximation in fluid dynamics, synergetics, nonlinear dynamics, numerical analysis, calculus of variations etc.

Besides her research work, she devoted a lot of time to teaching. Since 1974 at the Faculty of Mathematics of Bucharest University she led the courses of the theory of Navier-Stokes equations, Dynamics of rivers, Boundary Layer theory, Turbulence in fluids, Bifurcation theory (the first such course in Romania), Analytical Mechanics, Mechanics of continua, Nonlinear Dynamics, Sinergetics.

We must say that, during the communist regime, the non-proletarian roots of Prof. Adelina Georgescu rised many obstacles in her activity. However, she was not a member of the communist party, even if this would help her in the scientific carrier.

In 1990, as soon as the conditions (after the fall of the communism) allowed the affirmation of personal initiative in science, Professor A. Georgescu became the initiator of the project of a new research institute - Institute of Applied Mathematics of the Romanian Academy. The Institute was created in 1991 and Professor A. Georgescu became its first director. Simultaneously, she initiated the foundation of the Romanian Society of Applied and Industrial

Mathematics - ROMAI. Professor A. Georgescu was President of ROMAI all the time from the moment of the born of this Society up to the present.

In 1997 she completely moved to the didactic activity as a professor of the University of Pitești and between 1999 and 2005 she was also the Head of the Department of Applied Mathematics of the University of Pitești.

At the Faculty of Mathematics of Pitești Professor Adelina Georgescu lead the courses at the 3rd, 4th year and the master level in Analytical Mechanics, Mechanics of continua, Fluid dynamics, Dynamical systems, Bifurcation theory. She also founded and lead the "Victor Vălcovici" scientific seminar for master students and PhD students. Professor Adelina Georgescu was involved as a supervision of master theses and a supervisor and a referee to PhD Theses, having at this moment 16 PhD's and 7 PhD students. All the time spent at the University of Pitești she enthusiastically encouraged the work of young researchers in her fields of interest and especially in dynamical systems and bifurcation. New fields as the application of bifurcation theory in the economy and the biology were explored by some of her PhD students with remarkable, internationally recognized results.

The results of Professor's Adelina Georgescu activity were published in 16 books (some of them by well-known publishing houses as Kluwer, Chapman and Hall or Editura Tehnică, Editura Științifică și Enciclopedică) and 200 scientific papers in prestigious journals of mathematics. Besides these, around 40 papers were presented at Conferences and published in their Proceedings and she participated to 56 research grants. Among the books we quote: *Hydrodynamic stability theory*, Kluwer, Dordrecht (1985); *The asymptotic treatment of differential equations*, Chapman & Hall, London (1995); *Bifurcation theory. Principles and applications*, Univ. of Pitesti (1999) (with M. Moroianu,

I. Oprea); *FitzHugh-Nagumo model: bifurcation and dynamics*, Kluwer, Dordrecht (2000) (with. C. Roşoreanu, N. Giurgiţeanu).

A great energy and a lot of work were invested by Professor Adelina Georgescu in gathering the material and writing, with a few collaborators, two editions (2004 and 2006) of a Dictionary of Romanian Mathematicians, a precious tool in making an image of what the Romanian mathematical school represents. This is one of Professor's Adelina Georgescu many acts of patriotism.

As a recognition of her value, Professor Georgescu was a visiting professor at Romanian and foreign universities or research institutes, delivering a large number of conferences, leading doctoral courses and research seminars: University of Craiova; ICEPRONAV, Galaţi; Politecnico di Bari (2000); University of Bari, Dipartimento di Geologia (1998); Istituto per le Applicazioni del Calcolo (IAC), Roma (1997, 1996); University of Bari, Dipartimento di Matematica (1991, 1992, 1993, 1994, 1995, 1996, 2004, 2005, 2006, 2007); Instituto Pluridisciplinar, University Complutense, Madrid (1996); Institut für Chemie und Dynamik der Geosphere (ICG-4), KFA, Julich (1999, 1998, 1996, 1995); University of Havre (1994); University of Paris VI (1994, 1995), Istituto per le Ricerche di Matematica Applicata (IRMA), Bari (1992,1994); University of Metz (1991); Polytechnical Institute of Poznan (1991); Institute of Mathematics and its Applications, Minneapolis (1990); Institute für Strömungslehre und Strömungsmechanik, Karlsruhe (1990); University of Catania (2002); University of Lecce (2001, 2002); University of Messina (2001, 2002, 2003, 2004, 2005,2006, 2007); Institute of Mathematics, Belgrad (2003); CREATIS-INSA, Lyon (2003, 2004), University of Patras (2001, 2007).

In addition to her own scientific and didactic activity, Professor A. Georgescu has brought an inestimable contribution to the developing of Romanian ap-

plied and industrial mathematics as a talented manager of sciences. She was one of the main organizers of the first (1990) and second (1992) Preparatory Conference for the International Congress of Romanian Mathematics. Since 1993 annually, ROMAI and some universities (of Pitești, of Oradea, Tiraspol State University from Chișinău, Republic of Moldova) and city halls (of Mioveni) organize the already well-known International Conferences on Applied and Industrial Mathematics - CAIMs, real forums for genuine debates and exchanges of ideas in mathematics and its applications. They enrich the traditional lines in Romanian mathematics of the seventies of the last century with recent topics developed by a large number of professionals, mainly from Romania and Republic of Moldova, ranging from pure mathematics to engineering and high-school mathematics. However, the hard core of CAIMs consists of the few groups of research workers and professors in mathematics, physics and engineering. As the President of ROMAI, Professor Georgescu lead a policy of continuous support towards the mathematical community of the Republic of Moldova. The presence at each edition of CAIM of the mathematicians from the sister country was supported from the ROMAI funds. This is another act of patriotism and it leads to the creation of strong collaboration and friendship relations between the mathematical schools from the two sides of the river Prut. Besides the mathematicians from Romania and Republic of Moldova, mathematicians from countries like Canada, France, Greece, Italy, Russia, Slovakia, Ukraine, Uzbekistan, took part at the successive editions of CAIMs.

From 1997 until 2004, the Proceedings of CAIMs were published mainly in the journal *Buletinul Științific al Universității din Pitești*, (Seria Matematica si Informatica) this bringing to this journal a good place in the CNCSIS classification of scientific journals (namely a category B journal). Professor Adelina Georgescu was practically the Main Editor of this journal in the mentioned

period (with the exception of vol. 5). Since 2005, ROMAI began to issue ROMAI Journal that publishes mainly papers presented at CAIM, but also other valuable mathematical papers and Educational ROMAI Journal, which is devoted to preuniversity mathematics. Professor Georgescu is Editor in Chief of ROMAI Journal. She is also a member of the editorial board of some scientific journals like *Int. J. Chaos Theory and Applications*, *Applied and Numerical Mathematics* (e-Journal, Budapest), reviewer for *Math. Reviews*, *Zentralblatt für Math.*, and peer-reviewer for *Rev. Roum. Math. Pures Appl.*, *Rev. Roum. Phys.*, *Rev. Roum. Sci. Tech.-Mec. Appl.*; *St. Cerc. Mat.*; *St. Cerc. Mec. Appl.*

As a Professor at University of Pitești, Professor Georgescu initiated The Series of Applied and Industrial Mathematics of the University of Pitești, series of books containing 27 titles up to now. Five among her graduated PhD students, are now teaching at this University. The activity devoted to the formation of a school of Dynamical Systems Theory at the University of Pitești, when there was no similar school in our country, is also an act of patriotism of Professor Adelina Georgescu, as well as the permanent attempt of inducing high university standards at this University.

After her first visit to Chișinău in 1990, Professor A. Georgescu filled an important place in the mathematical life of the Republic of Moldova: she became an active participant to many mathematical forums organized in Moldova; she took part in the expert commissions in PhD dissertations; she is a supervisor of PhD and masters theses. Four editions of the CAIM were held in Republic of Moldova (1995, 1997, 2003, 2006). The Conference CAIM XIV was organized as a Satellite Conference of the International Congress of Mathematicians - 2006. Co-organizers of this Conference were Moldova State University with its Center for Education and Researches in Mathematics and Computer Sci-

ences, Tiraspol State University, Institute of Mathematics and Computer Sciences of the Academy of Sciences of Moldova, Academy of Economic Studies of Moldova, State Agency of Intellectual Property and Academy of Transports, Computer Sciences and Communications. Her valuable and multilateral contribution to the progress of Mathematics received a high recognition from the Academy of Science of Moldova: Professor A. Georgescu was rewarded with the Diploma of Honour of the Academy. More than that, she received the title of Doctor Honoris Causa of the University of Tiraspol (from Chişinău) in 2006.

Other international signs of recognition of Professor's Adelina Georgescu activity are her election as member of Russian Academy of Nonlinear Sciences and of Accademia Peloritana dei Pericolanti (Messina).

We wish to Professor Adelina Georgescu to complete her prodigious activity with many years of scientific work, of supervising the work of her PhD students, of leading the activity of ROMAI and the editing of ROMAI Journals, and last but not least, to recover the health and joy of life in order to see her grandsons and granddaughters growing and to enjoy their company!

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Mitrofan Ciobanu, member of the Academy of Science of Moldova, doctor habilitat, Professor, President of the Mathematical Society of the Republic of Moldova.

Anca-Veronica Ion, doctor, Lecturer Professor, University of Piteşti.