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PROFESSOR MIKLÓS RONTÓ. ON THE OCASSION OF HIS 75TH BIRTHDAY

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March 31th, 2018, has marked the 75th birthday of Miklós Rontó, Professor, Doctor of Physical and Mathematical Sciences (1986), Doctor of Mathematical Sciences (1994), now Professor Emeritus at the University of Miskolc, Hungary, an outstanding expert in the theory of boundary value problems for ordinary differential equations, who devoted more than 53 years of his life to education and research in mathematics. The purpose of this note is to review some particular moments, dates, facts, and thoughts which could furnish a picture of Miklós as we have known him for many years.

Miklós Rontó was born in the town of Beregszász (Hungary) in 1943. Having graduated form a secondary school in Beregszász in 1959, he received admission to

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the Uzhgorod (Ungvár) University and studied there at the Faculty of Physics and Mathematics.

After his university studies, in 1964, he received a Diploma in Mathematics and Computational Science and an official assignment to the Institute of Cybernetics of the Ukrainian Academy of Sciences, which he had already been affiliated to during the last two university years since 1963.

For 30 years had he been working in research institutes of the Ukrainian Academy of Sciences at various positions. In 1963–1971, he was a research staff member at the Institute of Cybernetics of the Ukrainian Academy of Sciences in Kiev (now V. M. Glushkov Institute of Cybernetics of NAS of Ukraine). Since 1971 till 1989, he had worked at the Institute of Electrodynamics and Institute of Problems of Modelling in Energetics (now Pukhov Institute for Modelling in Energy Engineering, named after his founder and director until 1981, a prominent scientist, Academician Georgy E. Pukhov) as a researcher and, later, as a leading researcher.

In 1971, in the Institute of Mathematics of the Ukrainian Academy of Sciences in Kiev, he defended the dissertation entitled "Finding periodic solutions using collocation methods" and received the degree of a Candidate of Physical and Mathematical Sciences. The dissertation and the papers related to it concern the investigation of periodic solutions of non-linear ordinary differential equations. He developed and substantiated a new version of the collocation method, which can be rather easily and efficiently used for finding approximate solutions in the case of systems of ordinary differential equations involving non-linearities of a general form.

In 1986, again in the Kiev Institute of Mathematics, he successfully defended the dissertation "Constructive numerical-analytic methods for the investigation of boundary value problems with parameters" and received the degree of a Doctor of Physical and Mathematical Sciences. In relation to this topic, he succeeded to develop a new direction of research concerning the so-called numerical-analytic methods based on successive approximations, their construction and rigorous substantiation. For wide classes of ordinary differential and delay differential equations, the developed methods are well applicable both to the qualitative analysis (study of existence of solutions) and approximate solution of the problems in question (explicit construction of higher order approximations).

Since 1989 till 1994, Miklós Rontó had been a head of the Laboratory of Differential and Integral Equations at the Institute of Mathematics in Kiev. Meanwhile, since 1986 till 1992, he had been a professor at the Chair of Differential and Integral Equations of the Kiev Shevchenko University.

For many years, Miklós had been combining the theoretical research with the work on purely applied problems, which influenced significantly his scientific career, thus giving him an opportunity to see the problems from completely different viewpoints. More than a decade of his connection with the Institute of Mathematics in Kiev has been particularly fruitful, where Miklós had been carrying out his research in

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the world-famous Kiev scientific school on differential equations associated with the names of Krylov, Bogolyubov, Mitropolsky, and Samoilenko.

Miklós's official connection with the University of Miskolc started in 1992, when he become a visiting professor and a year later, in 1993, a full professor at the Chair of Analysis. In 1994, he received in Budapest a diploma of Doctor of Mathematical Sciences.

Since 1997 till 2008, Miklós had been the head of the Department f Analysis of the University of Miskolc, and, for a certain period till 2007, also the director of the Institute of Mathematics.

The results of Miklós's research and educational activities has been a significant contribution to our department. His great devotion and energy brought about a new impulse in the research on differential equations carried out in our university, and as a teacher, he has always been most liked by his students for the excellent quality of lectures, a very pleasant disposition, and the ability to explain and to interest. Under his supervision, 10 students obtained the degree of Candidate of Science and 2 the PhD degree.

Since 2007 till 2011, Miklós Rontó had also been a professor of the Mathematics Department at the Eszterházy Károly High School in Eger (now Eszterházy Károly University).

The database of the Hungarian Academy of Sciences MTMT.hu (Magyar Tudomános Művek Tára,

https://vm.mtmt.hu//www/index.php?AuthorID=10003243)

currently lists 240 publications by Miklós Rontó. MathSciNet lists above 100 works by M. Rontó, their average Thomson Reuters IF is about 15. In various databases one can find about 1200 citations of M. Rontó's works. The list of journals where his works are published includes, in particular, *Abstract and Applied Analysis, Annales Univ. Sci. Budapest. Sec. Math., Acta Electrotechnica et Informatica, Applied Mathematics and Computation, Archivum Mathematicum* (Brno), *Boundary value Problems, Carpathian J. Math., Computers & Mathematics with Applications, Doklady Akad. Nauk SSSR, Electronic Journal of Qualitative Thery of Differential Equations, Georgian Math. J., Mathematica Pannonica, Nonlin. Analysis TMA, Nonlinear Oscillations, Periodica Mathematica Hungarica, Publ. Math. Debrecen, Ukrainian Math. J.*

Among Miklós Rontó's publications, there are three monographs [5, 7, 8] written in Russian jointly with his teacher, Academician A. M. Samoilenko, and translated to English [4,6]. He is also an author of a book chapter [1] and two university textbooks in Hungarian [2,3]. Miklós's papers and books form a significant contribution to the mathematical science and education.

Miklós Rontó is the holder of a number of prestigeous honours and awards:

1996: *Ukrainian State Award* in the field of science and technology **1997–1999:** Three-year *Széchenyi Professorship* for research and education

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2000: Miklós Rontó is included in *Outstanding People of the 20th Century*, 2nd ed. (Cambridge, England), in honour of an outstanding contribution to mathematical research and education

2003: Doctor Honoris Causa, Uzhgorod (Ungvár) National University

2003–2004: Charles Simonyi Professorship

- 2007: Academic Award of the Hungarian Academy of Sciences
- **2011:** *Pro Universitate* award of the University of Miskolc
- 2013: Professor Emeritus title, University of Miskolc

2018: Albert Szent-Györgyi Prize, Hungarian Ministry of Human Resources

Apart of the research and education, Miklós maintains many administrative and organisational activities. Already for more than 20 years, he has been the head of the research seminar of the Institute of Mathematics of our university. Since 2000, he is the founder and editor-in-chief of the journal *Miskolc Mathematical Notes* (Thomson Reuters IF 2016/17: 0.388). He is also a member of the editorial boards of the journals *Nonlinear Oscillations, Annales Mathematicae et Informaticae, Scientific Transactions of the Uzhgorod National University, Mathematical Series.*

Miklós Rontó is the founder and principal organiser of the series of international workshops with the common name "Constructive Methods for Non-linear Boundary Value Problems" held in Miskolc (2000, 2003, 2015, 2018), Sárospatak (2006), Eger (2009), Tokaj (2012).

We know well that, on his way to professional success, Miklós has always felt the warmth of his family, his beloved wife Valentina and son András with his wife Natalia and children Nicolas and Michael. Valentina has been his true friend, aide, and support already for 50 years. Interestingly enough, his wife, son, and daughterin-law all have a degree in differential equations.

It is now more than 50 years that Miklós Rontó has been working in mathematical research and education. Let me, in the name of our colleagues, thank him for cooperation and friendship and cordially wish him long life, good health, and family happiness, new nice ideas and achievements.

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