Prof.Dr.Doc. ADOLF HAIMOVICI

October 1st 1912 - January 1st 1993

On the first day of this year Professor Adolf Haimovici passed away. He was one of the most distinguished professors and scientists of the "Al.I.Cuza" University of Iaşi, an outstanding personality of Romanian mathematics, a man of special sensitiveness endowed with remarkable human qualities.

Professor Adolf Haimovici was born on the first of October 1912 in Iaşi where he attended "Gheorghe Asachi" primary school and the National High School. He graduated secondary school in 1930, being ranked first among his colleagues . As he showed exceptional abilities in the field of mathematics since high school, he applied for the Faculty of Sciences of Iaşi where he attended courses in mathematics and physics-mathematics in parallel. He graduated in 1934. Then he was a graduate student from 1934 to 1937. It was the same year of 1937 when he passed his final examination. In 1938 he defended his doctoral thesis at the university of Iaşi on conformal differential geometry, Professor Al.Myller being his Ph.D. supervisor. After he took his MA, he was a secondary school teacher for more than a decade (the boys' High school of Bacău, the National School, the Jewish High School, and High School no. 2 of Iaşi). From 1945, he taught at the Faculty of Mathematics of the University of Iaşi, going through all the levels of higher education *degrees: assistant (1945-1946), assitant lecturer (1946-1949) and professor from 1949 to 1981 when he retired and became professor emeritus.*

Professor Adolf Haimovici began his teaching and research activity as a member of the Seminar of Mathematics, enjoying the tradition and creative spirit of the school of mathematics of Iaşi and all the advantages offered by the excellent library of the Seminar of Mathematics.

As a teacher and professor, Adolf Haimovici carried out an important teaching activity, holding a large number of courses among which we mention: Differential and Integral Equations, Partial Differential Equations, The Approximation of Solutions of Some Problems from the Theory of Partial Differential Equations, The Theory of Distributions, and High Mathematics. His lectures, which were very rich in ideas and highly scientific gathered harmoniously both mathematical accuracy and accessibility. His inspiredly chosen examples, surprising analogies, proposed problems and solutions conferred a special charm to his lectures. His teaching efforts took a concrete form by the publication of his basic courses, where he also inserted an extremely valuable scientific material. These books raised a great interest as they became reference textbooks in the field of differential and integral equations. In this respect we mention the following books: Differential Equations and Integral Equations, The Equations of Mathematical Physics and Elements of Variational Calculus, as well as (in cooperation) Analytic and Differential Geometry which was awarded the State Prize.

A.Haimovici's rich scientific activity, carried out over a period of five decades and comprised in more than 150 articles, memoirs and books, can be broadly classified into three main research trends: differential geometry, functional equations, and applied mathematics.

In the field of differential geometry he approached various subjects in a lot of papers among which we find worth mentioning his studies concerning: minimal surfaces in Riemannian spaces, geometry of conform spaces, geometry of some groups of transformations, geometry of spaces with affine connection, geometry of some spaces with nonlinear connection, Euclidean differential geometry, geometry of Monge's equation, cuadrics in spaces with projective connection, Cartan spaces and others.

subjects in the theory of ordinary differential equations, partial differential equations and integrodifferential equations. In this respect, we notice his important contribution in the analytic theory of partial differential equations, as well as to the existence theory for several kinds of equations. Besides the treatises in differential equations mentioned above, he published an original monograph Differential Equations with Set Functions as Unknowns (Academy Publishing House, Bucharest, 1976) which gathers his own research papers and those of his students.

At the same time, he kept a special interest in applied mathematics. Thus, following V. Volterra, M. V. D'Ancona, A. Lotka, M. V. A. Kostitzin and others, he dealt, in a series of papers, with the mathematical study of some general and difficult problems in biomathematics. His numerous original results referring to biomathematics are comprised in his monograph Mathematical Models in the Dynamics of Populations which will come out at Junimea Publishing House in Iaşi. In another series of papers he tackled - either as an author or co-author - some problems in the field of mechanics (mechanics of point with variable mass, mouve of a point with hereditary mass, phenomenon of nonlinear elastic hysteresis etc.), thermodynamics and chemical technology, as well as economics.

We should also mention the significant results reached by professor Adolf Haimovici in the field of numerical analysis. We also mention here his excellent translation from English of the book Mathematical Views written by I.J.Schoenberg, a Romanian who became a professor at Wisconsin University, USA.

His scientific papers were published in various journals both in Romania and abroad and they were appreciated and quoted by famous mathematicians.

Professor A.Haimovici started and led for more than three decades the "Seminar of Functional Equations and Numerical Analysis". As part of the Seminar, he coordinated over 30 Ph.D. theses, which proves the germination power of the school he created. He initiated and encouraged research in the field of informatics, contributing to the formation of the Romanian school of informatics. It was due to his initiative that the Faculty laboratory of

- for the founding of the University Computer Centre.

Professor A.Haimovici contributed essentially to the modernization of all the levels of the Romanian education system. Thus, in the field of higher education he was involved in all the efforts of renewing the course subjects, seminars and scientific trends. Regarding secondary education, he published numerous studies addressed to teachers and students, held an impressive number of conferences throughout the country and devised high school text-books either by himself or in cooperation (Elements of Plane Geometry, Elements of Space Geometry, and Groups of Transformation).

He carried out a hard and competent activity as part of the Society of mathematical Sciences, being the chairman of the society branch in Iaşi for a couple of decades; Professor A.Haimovici's name should also be mentioned in the context of the Seminar of Mathematics "Al.Myller". As its director, he passionately and skillfully fought, by all methods and throughout decades, for the development of this cultural institution. As head of the Department of Differential Equations from 1949, as an editor of the mathematics section of the Scientific Annals of the "Al.I.Cuza" University of Iaşi and as a scientific secretary of the University Senate or of the Faculty of Mathematics, he contributed to the improvement of the quality of scientific research and education in Iaşi.

Professor A.Haimovici's death, regretted by all his acquaintances and friends, by the generations of students whom he taught with competence and abnegation, leaves behind it the memory of a great professor, of extreme modesty and generosity, who contributed to the perpetuation of the valuable traditions of the Seminar of Mathematics of Iaşi and to the growth of the prestige enjoyed by the Romanian Mathematical School all over the world.

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Nicolaie Luca
Gheorghe Moroşanu

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AUTOTOPISM CHARACTERIZATION OF G-LOOPS

BY

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1.Introduction. The concept of $G-loops$ has been studied, by B e l o u s o v [2] and B a s a r a b [1]. G o o d a i r e and R o b i n s o n [7] have studied the class of conjugacy closed loops and proved that they are $G-loops$. They have given a characterization of conjugacy closed loops, and established some algebraic properties of such loops. Recently, S h a r m a and S o l a r i n [11] proved that Bol loops of order 3p, where p is a prime number greater than 3 are $G-loops$. S o l a r i n and C h i b o k a [12] have proved that extra loops and central loops are conjugacy closed and hence they are $G-loops$. This they achieved by considering the algebras satisfying extra and central identities respectively. B r u c k [3] had raised the question as to the necessary and sufficient conditions for a loop to be a $G-loop$. He noted that associativity is sufficient, but not necessary since the multiplicative loop of any alternative division ring has this property. We shall give a characterization for $G-loops$ in general. The autotopism characterization for conjugacy closed loops will be seen to be a special case of our general characterization. We prove that while every subloop of a $G-loop$ is a $G-loop$, the homomorphic image of a $G-loop$ is also a $G-loop$. It is also proved that certain diassociative Hamiltonian loops are $G-loops$.

Definition 1.1. If $(G,\cdot)$ is a loop and $a \in G$, the permutations $R(a)$ and $L(a)$, called the right and left multiplications, respectively, are defined by $xR(a) = xa$, and $xL(a) = ax$, for all $x \in G$.

Definition 1.2. A loop $(G,.)$ satisfies the right inverse property if and only if $xy \cdot y^{\rho} = x$ for all $x, y \in G$. If $y^{\lambda} \cdot yx = x$ for all $x, y \in G$, then $(G,\cdot)$ is said to satisfy the left inverse property. A loop which satisfies both inverse properties is called an inverse property loop.

Definition 1.3. A loop $(G,\cdot)$ is said to be conjugacy closed if and