Czechoslovak Mathematical Journal

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Czechoslovak Mathematical Journal, Vol. 34 (1984), No. 4, 664–669

Persistent URL: http://dml.cz/dmlcz/101991

Czechoslovak Mathematical Journal, 34 (109) 1984, Praha

SIXTY YEARS OF PROFESSOR MILOŠ ZLÁMAL

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On December 30, 1984, Professor Miloš Zlámal will reach sixty years of age.

Miloš Zlámal was born at Zborovice (Moravia). After completing his secondary school he studied Mathematics and Physics at the Faculty of Science of the Brno University. He graduated in 1948 and took the job of Lecturer at the Technical University at Brno, where he worked for two years. In 1950, after obtaining his RNDr. degree, he became research student (aspirant) at the Mathematical Institute of the Czechoslovak Academy of Sciences. After successfully completing his thesis he returned to Brno and resumed his work at the University as Senior Lecturer and, soon after, Reader. In 1961 he came to the Technical University as head of the Computing Laboratory. In 1963 he obtained his DrSc. degree from the Czechoslovak Academy of Sciences, and in the same year was appointed director of the Computing Laboratory, later reorganized as the Regional Centre of Computations. For his outstanding results he was granted the Klement Gottwald State Prize in 1974, and in 1981 was elected a corresponding member of the Czechoslovak Academy of Sciences. Since 1982 he has been Chairman of the Scientific Board for Mathematics of the Academy.

The research work of Professor Zlámal has been very extensive and has considerably affected the world trends of numerical mathematics. His first research papers were focused on problems of oscillatory and asymptotic properties of ordinary differential equations and developed the results of the Brno seminar in this field. However, the creative enthusiasm and powerful mathematical erudition led Professor Zlámal to the more attractive field of partial differential equations. His attention was concentrated mainly to hyperbolic equations with a small parameter at the highest derivative as well as to parabolic equations resulting from hyperbolic and elliptic ones by a limiting process. After coming to the Computing Laboratory, Zlámal started to work in the field of numerical treatment of partial differential equations, at first by the finite difference method and then by the finite element method. In 1968, the journal Numerische Mathematik published his work *On the finite element method* that made Zlámal famous not only among mathematicians but also among

engineers both in Czechoslovakia and abroad. Further development confirmed the depth of the ideas contained in the paper, in which Zlámal laid the mathematical foundations of the finite element method, thus leading the way to the discovering of the close relation between the approximation theory and the numerical mathematics. In his further papers Zlámal found new original variants of the finite element method, developing them to very effective computing processes which are numerically

stable and to a high degree universal. A number of his works have been devoted to applications of the finite element method in engineering, which shows the wide scope of Zlámal's konwledge as well as his effort to reach the immediate union of science and applications.

The response to Zlámal's work among specialists all over the world has been remarkable. He has been quoted by the most prominent specialists both in mathematics and engineering; his name can be found in almost every paper devoted to the finite element method. His results have been included in many textbooks and monographs, e.g. Stoer-Bulirsch: *Einführung in die numerische Mathematik* (pp. 213 to 215), Springer 1973; G. I. Marčuk: *Metody vyčislitelnoj matematiki* (pp. 71–73),

Nauka, Moskva 1978. One of the most distinguished specialists in numerical mathematics, P. G. Ciarlet, wrote in his monograph *The Finite Element Method for Elliptic Problems* (p. 167): "... Then the outbreak came with the paper of Zlámal (1968), which is generally regarded as the first mathematical error analysis of the general finite element method as we know it today."

Another proof of Zlámal's successful work is the number of conferences and other events to which he has been invited as one of the main speakers. He also lectured on his results as a visiting professor at universities in Maryland, Paris, Göteborg, and London.

In spite of his frequent stays abroad where Prof. Zlámal has successfully represented the Czechoslovak mathematics, the centre of his work is at the Regional Centre of Computations of the Technical University at Brno. The group of researchers gathered around Prof. Zlámal has achieved many excellent results. Among others, many complex computer programs have been prepared, which facilitate the solution of important technical problems in many branches of industry. The "Brno School of the finite element method" has gained a world-wide reputation.

Professor Zlámal is equally consistent in his research as in his personal life. All his activities exhibit the features of exactness, ingeniousness and dilligence, with which he continues to pursue his aim. Perhaps this is why he has been able, in spite of his manysided activities in science and research, to find time for sport, tourism and his friends. His profile would not be complete without mentioning that neither his fame nor his important offices have taken anything from his modesty and friendly relation to his colleagues.

On the occasion of the sixtieth anniversary of M. Zlámal's birthday, Czechoslovak mathematical community sends him cordial greetings and wishes of firm health, personal satisfaction as well as many further successes in his work.

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