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Applied mathematics during the 50 years history of the Mathematical Institute of the Academy of Sciences

APPLIED MATHEMATICS DURING THE 50 YEARS HISTORY
OF THE MATHEMATICAL INSTITUTE
OF THE ACADEMY OF SCIENCES

The Nazi occupation of Czechoslovakia during the World War II had a devastating effect on the cultural and intellectual life in the whole country. All Czech universities were closed from 1939 till the end of the war, and leading personalities of science and culture were victims of systematic persecution. After 1945, the resulting shortage in persons qualified for teaching and research was multiplied by the fact that the number of students during the first years was dramatically high. The necessity of educating new specialists in many areas thus became obvious.

In mathematical sciences, the first step to improve the situation was the foundation of the Institute for Mathematics which started its work on March 14, 1947. The main merit for its foundation goes to Eduard Čech who also became its director. The Institute was a body of the Czech Academy of Sciences and Arts and its main task was to organize lectures and seminars for university teachers, graduate students, and other interested persons (for example, high school teachers), as well as to promote international cooperation. All members of the Institute did their work at the Institute apart from their main job. The Institute also started to build its own library.

The Institute for Mathematics was later reorganized and renamed to become the Central Mathematical Institute on July 1, 1950 with about ten full-time researchers. In 1950 the Institute started the training of its first graduate students. Another task of the Institute was to take care for publishing mathematical books and journals.

In 1951, the Institute moved to its own quarters at Žitná Street 25, Praha 1. Under political pressure, the Institute took over into its possession and care not only the house which till then had belonged to the Union of Czechoslovak Mathematicians and Physicists but also the scientific library which the Union had been building up since its foundation in 1862.

The Czechoslovak Academy of Sciences was established, by an act of October 29, 1952, on January 1, 1953. The Mathematical Institute of the Academy resulted, already on November 11, 1952, from the Central Mathematical Institute, taking over all its tasks, employees and graduate students.

In 1969, the Mathematical Institute of the Czechoslovak Academy of Sciences was also established in Brno and Otakar Borůvka, famous for his work in differential

equations and graph theory, was appointed its director. The Institute was reorganized in 1972 and since then it forms the Brno branch of the Mathematical Institute in Prague. The Mathematical Institute is part of the Academy of Sciences of the Czech Republic since January 1, 1993 when the Czech Republic was established.

Even during the hardest communist period in the early fifties, mathematics as non-ideological science enjoyed a relatively high degree of freedom in the choice of research topics. It was thus possible to promote modern research in differential equations, numerical analysis and mathematical statistics. More abstract branches like functional analysis, topology, and mathematical logic developed in the Institute in the sixties. By its public mathematical library, research and publishing activities, seminars and teaching, the Mathematical Institute became soon one of the most important centers for the Czech mathematical community.

Young ambitious researchers around Ivo Babuška were aware of the increasing importance of mathematics for other scientific and engineering disciplines, and started to develop applied mathematics as an independent research branch. Besides direct cooperations on industrial projects and joint seminars with engineers and physicists, this effort resulted in the foundation of our Journal in 1956 under the name "Aplikace matematiky", and I. Babuška became its first editor-in-chief. During the first two years of its existence, all articles were published in Czech or Slovak. Among the first authors we find the most distinguished representatives of our applied mathematics like J. Nečas, F. Nožička, J. Polášek, K. Rektorys, O. Vejvoda, M. Zlámal and others. The first paper in a foreign language was published in English (!) in 1958. During the 1960's, the international character of the Journal started to prevail, and the last mathematical contribution in Czech appeared in 1973. To confirm this tendency, the publisher decided in 1990 to change the name of the Journal into "Applications of Mathematics", and in 2002 to extend the (exclusively Czech and Slovak so far) Editorial Board by asking excellent foreign experts in applied mathematics for cooperation in order to keep our high standards in the increasing international competition.

Nowadays, the profile of the Journal is balanced between numerical mathematics (about 140 papers during the last 10 years), partial differential equations and modelling (about 70 papers), mathematical statistics and applied probability (60), and differential equations and analysis (50). Along with the two periodicals with longer tradition published by the Mathematical Institute, namely Czechoslovak Mathematical Journal and Mathematica Bohemica, Applications of Mathematics thus contributes to the image of the Institute as a modern and active research institution.

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