

## IN MEMORY OF ACADEMICIAN ALOIS ZÁTOPEK

On June 22, 1985, Prof. RNDr. Alois Zátópek, DrSc., member of the Czechoslovak Academy of Sciences, died at the age of 78.

Academician A. Zátópek was born at Zašová in Moravia on June 30, 1907. In 1927, he began his studies at the Faculty of Sciences of the Charles University in Prague from which he graduated with honours in 1932. In that same year, he submitted his thesis on the energetic relations in two induction-coupled oscillation circuits and was awarded the degree of Doctor of Natural Sciences. In 1946, he was appointed associate professor of geophysics in the Faculty of Sciences as a result of his study of the propagation of East Alpine earthquakes in the Bohemian Massif. From 1948 to 1964, he was scientific secretary, 1965 — 1970 President of the National Geophysical and Geodetic Committee. In 1953, he was elected Corresponding Member of the Czechoslovak Academy of Sciences and in 1968 he was elected Academician. For his scientific work in the seismicity of Czechoslovakia he was awarded the State Prize in 1957. His outstanding merits in the development of geophysics were reflected in a number of distinctions bestowed on him. In 1967, the President of the Republic decorated him with the Order of Labour, he was awarded the Medal of the City of Skopje for his work in reconstructing the city after the catastrophic earthquake, and he was also awarded the Medal of the Charles University in 1965, the Euler Medal by the Soviet Academy in 1960, the Gold Medal of the Charles University in 1968, the Gold Medal of the Czechoslovak Academy of Sciences for merit in the development of mankind and science, the Copernicus Medal of the Ministry of Culture in 1973, the Medal of the Commission of the Academies of the Socialist Countries for Planetary Geophysics for outstanding scientific and organizational activity in 1976 and also the Medal of the Czechoslovak Meteorological Society.

Academician Zátópek devoted his life to paedagogical work in the Charles University and to his scientific work in geophysics. After the re-opening of the universities in liberated Czechoslovakia after World War II, he was instrumental in introducing the teaching of geophysics at the newly established Faculty of Mathematics and Physics of the Charles University. He worked out the syllabus of the specialized study of geophysics and, for a number of years, he lectured the whole course himself and conducted the seminars. For years he worked with inexhaustible zest and tirelessly served the interests of the development of science and the society. It was mostly his merit that Czechoslovak geophysics grew from the modest beginnings into an important scientific base with hundreds of specialists, most of whom were either his direct pupils or post-graduate students. He also taught abroad, during his sojourn in Tokyo where he held the post of senior councillor of a special UNESCO development project. His scientific work was concentrated on the research into the seismicity of Czechoslovakia, the classification of earthquake intensities and on the study of the magnitude quantity. He worked very intensively on the research into European meteorological microseisms. In the latter part of his life, he devoted himself to work of a synthetic nature.

Academician Zátópek carried out important work in the field of organizing Czechoslovak geophysics. From 1935 to 1954 he headed the Czechoslovak Seismic Service. During the whole post-war period, he stood in the forefront of the preparation of plans for the scientific research into geophysics in the function of chairman of the council of the key project and, for long years, as chairman of the Board of Astronomy and Geophysics. He carried out important work in developing the Czechoslovak scientific base, especially with regard to the founding of the Geo-

physical Institute of the Czechoslovak Academy of Sciences. His long years of persistent work on the Editorial Board of the journal *Studia geophysica et geodaetica* were highly appreciated.

The work of Academician Zátópek has been acknowledged not only at home, but also abroad. He took part in many international scientific conferences in Czechoslovakia as well as in foreign countries. From 1948 to 1951 and then again from 1960 to 1963, he was member of the Executive Committee of the International Association of Seismology. As member of the Technical Assistance Mission of UNESCO he studied the mechanism and effects of the Skopje earthquake of July 26, 1963. In 1964, he was elected honorary member of the Society of Hungarian Geophysicists and in 1968 member of the Academia Leopoldina.

In the decease of Academician Zátópek, the Czechoslovak Academy of Sciences has lost an outstanding specialist and excellent paedagogue, and the Editorial Board of this journal a collaborator of long standing. A man who devoted his whole life to the development of science and the society, as well as to the education of the young generation of geophysicists, has passed away.

*Editorial Board*

### КРИТИКА — REVIEWS

Oscar L. Colombo: The global mapping of gravity with two satellites. Netherlands Geodetic Commission, Publications on Geodesy, new series, Vol. 7, No. 3, Delft 1984, 253 pages.

The publication deals with the use of satellite-to-satellite tracking for determining the detailed structure of the gravity field of a planet. It is assumed that this field is expressed in terms of Stokes' constants going to high degrees ( $n = 300$ ).

A detailed mathematical description of the solution of the whole considerably complicated problem is given in four chapters. Some numerical examples calculated using models are also given, however, as a rule to simplify the issue.

The author draws attention to the difficulties which occur if the motion of manmade satellites is described in the classical way by means of Lagrange's planetary equations, and he formulates the whole problem in a moving orbital coordinate system using Hill's equations of motion. This approach enables certain symmetries, which occur in describing the mutual motion of two satellites, to be utilized.

The whole problem of determining Stokes' constants is then converted by linearization to the method of least squares, or to least-squares collocation. The use of the two methods leads to the solution of a system of linear algebraic equations with a large number of parameters. Considerable attention is also devoted to this problem and this is where the advantage of using Hill's equations of motion can be appreciated. The directly set up arrow-shaped normal equations can then be solved by Choleski's method of decomposition.

The proposed method enables the parameters of the gravity field to be determined up to degree 300 without running into serious numerical difficulties within a few hours if currently available computers are employed.

The book can serve as an excellent aid in introducing the reader to problems of satellite-to-satellite tracking. However, for immediate concrete exploitation many problems still remain to be solved.

*Jan Kostecký*