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Otakar Boruvka (Obituary)

Differential Equations 31, 1995, 10, 1744-1745 [translated from Russian edition]

Persistent URL: http://dml.cz/dmlcz/500435

Differential Equations, Vol. 31, No. 10, 1995

OTAKAR BORUVKA
(Obituary)

On July 22, 1995, Otakar Boruvka, a distinguished Czech mathematician, a known scientific organizer, a talented teacher, and a real patriot of his motherland, died in Brno, Czech Republic, at the age of 96.

O. Boruvka was born on May 10, 1899, in Ukherskii Ostrog (Moravia) and studied at Masaryk University in Brno. All his long and fruitful life was closely connected with this beautiful city: from 1921 till 1970 he taught at Brno University, in 1969 he founded the Division of the Mathematical Institute of the Czech Academy of Sciences, where he was the director for a long time and worked until recently.

Otakar Boruvka made a significant contribution to the world mathematical science by proposing several deep conceptions in its various fields. His perfect results and efficient methods firstly deal with differential equations, algebra, and geometry. In 1926, long before the arrangement of graph theory as a separate mathematical branch, he found an algorithmic solution of the problem on the minimization of cost in electrical networks, which is a version of the transport problem. In the thirties, he performed a vast study of two-dimensional spherical surfaces in even-dimensional spaces of constant curvature; S. Chern called one of the obtained equations the Frenet-Boruvka formula. O. Boruvka began a systematic comprehensive study of groupoids, which form one of most important objects in general algebra; the results of this investigation were summarized in his monograph "Foundations of the Theory of Groupoids and Groups" published in German (1960) and English (1974).

Since 1950, O. Boruvka's scientific interests were concentrated on ordinary differential equations. Here he introduced a set of fundamentally new ideas and proposed several original approaches. The activity of O. Boruvka in this field of mathematics resulted in the fruitful promising theory of global transformations of second-order linear differential equations, of extremely high level of algebraization and geometrization. A series of difficult problems concerning qualitative properties of solutions to linear differential equations was answered on this direction. Boruvka's monograph "Second-Order Linear Differentiable Transformations" published in Berlin (1967) and in London (1971) deservedly became widely known. Otakar Boruvka's survey article "Global Transformations of Second-Order Linear Differential Equations" was published in the journal "Differentsial'nye Uravneniya" ("Differential Equations") in 1976.

Although numerous Czech, Slovakian, and foreign mathematicians successfully used O. Boruvka's theory, it should be noted that his rich scientific legacy is to be deeply understood and is to be developed.

The substantial contribution by Otakar Boruvka to the mathematical science merited well-deserved acknowledgement. He became a corresponding member of the Czechoslovakian Academy of Sciences in 1953 and an Academician in 1965. O. Boruvka was rewarded by numerous honorary decorations of universities and academies of various countries. In 1960 Academy of Sciences of USSR awarded him L. Euler Gold Medal.

Otakar Boruvka, a distinguished person in the history of Czech science, has always been worried about the teaching young scientific generation. He organized an active research school: many mathematicians in Czechia and Slovakia are his disciples and discipies of his disciples. His extraordinary enthusiasm inspires them to creative research.

Translated from *Differentsial'nye Uravneniya*, **31**, No. 10, pp. 1770–1771, October, 1995.

 0012-2661/95/3110-1744$12.50

Otakar Boruvka, a convinced supporter of wide international scientific collaboration, took part in organizing the famous EQUADIFF conferences on differential equations and their applications that hold every four years in Prague, Bratislava, and Brno. The publication of the known journal "Archivum Mathematikum" since 1965 was also pioneered by Otakar Boruvka.

The life and the scientific activity of Otakar Boruvka is a beautiful example of continuity of deep mathematical ideas that came into the XX century from the XIX century and now must pass to the XXI century.

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