NEWS AND NOTICES

PROFESSOR BOHDAN ZELINKA
(May 16, 1940–February 5, 2005)

Miroslav Fiedler, Praha

Two years ago, the Czech and Slovak mathematical community lost one of its most active and well known members, Professor Bohdan Zelinka. Let me shortly commemorate his life, results and ideas.

Professor Zelinka was born on May 16, 1940 in Nový Bydžov. Soon his family moved to Liberec which became his home city for all his life. As has been the case with so many others, he became attracted to mathematics by his success in the Mathematical Olympiad. He decided to study mathematics and descriptive geometry at Charles University in Prague. Already here, the topic of his diploma thesis "The vertex- and edge-connectivity number of finite graphs" turned his interests in mathematics to graph theory.

After having successfully completed his studies, he spent two years in compulsory military service. Even then he did not lose interest in mathematics. I remember having written a letter of invitation for him to attend the later renowned international meeting on graph theory in Smolenice in 1963. He was then the only participant in soldier's uniform.

Let me remark that the symposium in Smolenice was the first international meeting on graph theory in the world. Most of the internationally known mathematicians working in the field took part there, such as Erdős, Gallai, Dirac, Harary, Zykov and others. There also was (a tradition observed ever since) a problem session, and I remember Zelinka systematically studied the posed problems and indeed solved some of them later.

In 1964, Zelinka returned to Liberec where he joined the faculty of the Technical University, first as assistant professor, later as associated and since 1990 as full professor.

Professor Zelinka was one of the most productive mathematicians in the Czech Republic. He published almost 300 research papers, most of them from graph theory; a good part of the papers concerned algebra and a few practical problems which the department of mathematics at the Technical University of Liberec helped to solve.

In his graph theory papers, Zelinka discussed an incredibly rich variety of problems. This is clear from the attached list of publications.

As I have already mentioned, he started by systematically solving problems posed at the Smolenice symposium. He was successful in several cases; the first results were presented at the Tihany meeting in Hungary [26]. Then he studied intersection graphs of several kinds of objects: lattices [64], Abelian groups [77], graphs [76], semilattices [84], tree algebras [100]. However, the most important contributions of Zelinka to graph theory are in two directions:

The first is domination in graphs. Here, he studied (in [127], [134], [135], [153], etc.) the relationship of the known notions of the domatic number of a graph and the totally domatic number of a graph to other characteristics of graphs; he discovered relations which cannot be improved. Also, he found these numbers for several special classes of graphs. In addition, he introduced several new characteristics of graphs related to the previous one, such as the edge-domatic number [159], the complementarily domatic number [197], the semidomatic numbers of a digraph [225], etc.

The second important contribution is related to the Vizing problem how to distinguish two graphs with the same number of vertices and the same number of edges, of course up to isomorphism. He introduced (in [151]) and studied the new notion of distance between graphs (more precisely: between isomorphism classes of two graphs). He then did the same for the so called edge distance of graphs [189] and for the distance between isomorphism classes od digraphs ([196], [222], [226]).

As Zelinka's algebraic papers concerns, let me mention that most of them studied tolerances on algebraic objects ([35], [71], [81], [83], [103], [123], [165], [169], [185], [203], etc.). Zelinka also studied (in fact, he started research in mathematics in this field) the language theory ([6], [8], [10], [15], [18], [24], [32], [38], [50]).

However, mathematics was by far not the only activity of Bohdan Zelinka. He was solver (in fact, several times champion of Czechoslovakia) as well as inventor of problems in puzzle competitions. He got the idea to create the anthem of the graph theory meetings; he wrote the verses to which music was then composed by Z. Ryjáček. The text has been translated into several languages; e.g., [245]). What made him quite famous among Czech and Slovak mathematicians, was the idea of Professor Hammerstein, a fictitions mathematician who "wanted to attend" the meetings at which Zelinka participated and always sent (through Zelinka) a jocular lecture parodically surveying the results presented at the meeting.

I could certainly list a number of other activities of Bohdan Zelinka. The Czech and Slovak mathematical community misses and alwyas will miss him immensely.

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