



MARKO PETKOVŠEK (1955 – 2023)

Marko Petkovšek was born in 1955 and died in 2023. He completed his PhD in 1991 at the School of Computer Science, Carnegie Mellon University, Pittsburgh, after which he worked at the University of Ljubljana until retirement in 2021 as a professor, researcher, the head of the mathematics department and vice-dean.

Marko Petkovšek has an outstanding worldwide reputation in the fields of discrete mathematics and theoretical computer science, which he earned through his research and work in the field of symbolic computation. He is best known as a coauthor of the well-known book $A=B$ and the author of the “Hyper” algorithm for solving linear recursive difference equations with polynomial coefficients in terms of hypergeometric forms, nowadays called the Petkovšek’s algorithm.

In addition to fundamental results and publications in symbolic computation, Marko’s work in graph theory, where he intermittently collaborated with one of us over a period of several decades, also contributes to his visibility. Let us say a little more about his work in this area. He explored various classes of perfect graphs, graphs with non-empty intersections of longest paths, hereditary graph classes, Fibonacci and Lucas cubes, and attacked several related problems. One of the first challenges suggested by Marko was the problem of the intersection of longest paths in graphs. We wrote a joint paper that went mostly unnoticed for a quarter of a century, only to receive wide attention in the past decade. Marko’s mathematical breadth was extremely helpful in the treatment of various problems, as it often led to unexpected insights. Of this kind were his contributions to the enumeration of the vertex and edge orbits of Fibonacci cubes and Lucas cubes. Marko’s work also established new directions of development. In his paper [Marko Petkovšek, Letter graphs and well-quasi-order by induced subgraphs, *Discrete Mathematics* **244** (2002) 375–388] he introduced the notion of letter graphs and proved that the class of k -letter graphs is well-quasi-ordered by the induced subgraph relation, and that it has only finitely many minimal forbidden induced subgraphs. This visionary paper preceded developments in the field by a decade, and is today recognized as a fundamental reference on the topic.

Let us finish with a few personal thoughts about Marko. Our deep and unbroken friendship began more than 30 years ago. One of us was lucky to share an office with Marko as a freshly minted assistant, and the other as his student. He introduced us both to the world of research and transferred his enthusiasm for it to us. He was the best possible friend. Despite his broad mathematical knowledge and depth of thought, he was extremely modest and downplayed his strengths and contributions. His was always pleasant and soothing





company, be it on mountain trails, Saturday evening bridge sessions, or just conversations at and around work. In addition to mathematics, he had a broad general outlook. He held himself to the highest ethical and moral standards, inspiring others to do the same. And on mountain hikes he could always name every flower we saw in his mother tongue Slovene, German, and Latin.

Unfortunately, Marko left us too soon. We shall always remember the beautiful moments we spent with him and keep him in our memories as a truly exceptional man.

Andrej Bauer and Sandi Klavžar