Preface

This (and partly also the next) issue of the *Proceedings of the Estonian Academy of Sciences. Physics. Mathematics* contains selected contributions to the 2nd International Conference on Approximation Methods and Orthogonal Expansions (AMOE2003), held in the Sport Centre of the University of Tartu at Kääriku, Estonia, on 12–14 September 2003. The conference was dedicated to the 65th birthday of Gennadi Vainikko, Academician of the Estonian Academy of Sciences, a prominent scientist in the field of theoretical numerical analysis, integral equations, ill-posed and inverse problems.

G. Vainikko was born on 31 May 1938 at Kontupohja, Russian Karelia. In 1942 his family settled in Estonia. He graduated from the Faculty of Mathematical and Natural Sciences of the University of Tartu in 1961. He received his PhD degree in 1964 at the University of Tartu and his DSc degree in 1969 at Voronezh State University. In 1971–1992 G. Vainikko was Professor and Head of the Chair of Numerical Mathematics, in 1992–1994 Ordinary Professor of Differential and Integral Equations at the Institute of Applied Mathematics of the University of Tartu. From 1995 until his retirement in June 2003 he was Professor at Helsinki University of Technology.

The research interests of G. Vainikko are broad, including among others different problems of applied functional analysis, the general theory of approximation methods, projection methods, ill-posed problems, inverse problems, theory and numerical solution of weakly singular integral equations, pseudodifferential equations and problems of mathematical physics. The list of his publications contains more than 200 scientific papers and 12 monographs. Fragments of his scientific activities can be found in *Acta et Commentationes Universitatis Tartuensis* (1988, 833, 3–18) and *Differential and Integral Equations: Theory and Numerical Analysis* (ed. by A. Pedas, Estonian Mathematical Society, Tartu, 1999, 3–18).

G. Vainikko is the founder of the school of numerical analysis in Estonia. Most of the present-day Estonian specialists in this field are influenced by his ideas. Numerical analysis was also the main topic of the conference at

Kääriku. The conference brought together more than 40 mathematicians, mainly from Estonia, but also from Finland, Germany, India, Japan, Latvia, Poland, Russia, and the United Kingdom. Twenty-four talks were given at this conference, which were devoted to the approximation methods for differential, integral and operator equations, splines, and ill-posed problems. The speakers were R. Ansorge, R. Grigorieff, R. Plato, A. Rogozhin, U. Tautenhahn (Germany), I. Graham, A. Spence (United Kingdom), J. Saranen, V. Turunen (Finland), N. Budkina (Latvia), I. Lifanov (Russia), B. Limaye (India), R. Suda (Japan), Z. Wronicz (Poland), U. Hämarik, J. Janno, U. Kangro, A. Kivinukk, J. Lippus, P. Oja, R. Palm, A. Pedas, D. Saveljeva, and G. Vainikko (Estonia). The abstracts of the conference talks can be found in the volume *2nd International Conference on Approximation Methods and Orthogonal Expansions, September 12–14, 2003, Kääriku, Estonia. Abstracts* (Estonian Mathematical Society, Tartu, 2003).

The Organizing Committee hopes that the articles of the present issue and three articles – by N. Budkina, J. Saranen (co-authors J. Anttila and J. Hämäläinen), and V. Turunen in the next issue of the *Proceedings of the Estonian Academy of Sciences. Physics. Mathematics* – will reflect the workshop atmosphere of the Kääriku conference.

The previous conference of this series was held also at Kääriku in 1998 and the proceedings of that conference were published in the *Proceedings of the Estonian Academy of Sciences. Physics. Mathematics* (1999, **48**, 2).

Arvet Pedas
Chairman of the Organizing Committee