

Preface

Handbook of Functional Equations: Stability Theory consists of 17 chapters written by eminent scientists from the international mathematical community, who present important research works in the field of mathematical analysis and related subjects, particularly in the Ulam stability theory of functional equations. These works provide an insight in a large domain of research with emphasis to the discussion of several theories, methods and problems in approximation theory, influenced by the seminal work of the well-known mathematician and physicist Stanislaw Ulam (1909–1984). Emphasis is given to one of his fundamental problems concerning approximate homomorphisms.

The chapters of this book focus mainly on both old and recent developments on the equation of homomorphism for square symmetric groupoids, the linear and polynomial functional equations in a single variable, the Drygas functional equation on amenable semigroups, monomial functional equation, the Cauchy–Jensen type mappings, differential equations and differential operators, operational equations and inclusions, generalized module left higher derivations, selections of set-valued mappings, D’Alembert’s functional equation, characterizations of information measures, functional equations in restricted domains, as well as generalized functional stability and fixed point theory. It is a pleasure to express our deepest thanks to all the mathematicians who, through their works, participated in this publication. I would like to thank Dr. Michael Batsyn for his invaluable help during the preparation of this book. I would also wish to acknowledge the superb assistance that the staff of Springer has provided for the publication of this work.

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