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Marcello D'Abbicco • Marcelo Rempel Ebert •
Vladimir Georgiev • Tohru Ozawa
Editors

New Tools for Nonlinear PDEs and Application

Birkhäuser

Editors
Marcello D'Abbicco
Mathematics
University of Bari
Bari, Italy

Marcelo Rempel Ebert
Department of Computing and Mathematics
University of São Paulo
Ribeirão Preto, São Paulo, Brazil

Vladimir Georgiev
Department of Mathematics
University of Pisa
Pisa, Italy

Tohru Ozawa
Department of Applied Physics
Waseda University
Tokyo, Japan

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Preface

The theory of evolution partial differential equations (PDEs) has made considerable strides in the last several years. This rapid development was driven on by the connections between this theory and other fields of the mathematics, e.g., the harmonic analysis, and by its strong ties to problems from mathematical physics. This volume includes 13 papers highlighting recent results in mathematics, and focusing on nonlinear PDEs and their applications. Readers will find, e.g., contributions on the qualitative properties of solutions of linear and nonlinear evolution models, as well as results concerning well-posedness, asymptotic profiles of solutions, blow-up behavior, and the influence of low regular coefficients.

We employed a strict blind review process, in the course of which each contribution was evaluated by two anonymous referees. The papers provide a broad range of ideas and include detailed proofs of their results.

Most of the contributors attended the sessions "Recent progress in evolution equations" and "Nonlinear PDEs" during the 11th ISAAC congress, which was held in Växjö, Sweden, in 2017. Some speakers were invited to deliver their talks during a joint day of these two sessions. Though the event is what initially provided the idea of creating a special volume of selected research papers, the present volume is not merely a collection of proceedings, but a stand-alone project gathering original contributions from active researchers on the latest trends in nonlinear evolution PDEs.

The International Society for Analysis, its Applications and Computation (ISAAC) has organized the biennial ISAAC congress at venues around the globe since 1997. The 2017 congress continued the successful series of meetings: in Delaware, USA (1997), Fukuoka, Japan (1999), Berlin, Germany (2001), Toronto, Canada (2003), Catania, Italy (2005), Ankara, Turkey (2007), London, UK (2009), Moscow, Russia (2011), Krakow, Poland (2013), Macau, China (2015). ISAAC is home to nearly 300 members from all regions of the world,

as well as eight special interest groups focusing on different areas of analysis and computation.

Bari, Italy — Marcello D'Abbicco
Ribeirão Preto, São Paulo, Brazil — Marcelo Rempel Ebert
Pisa, Italy — Vladimir Georgiev
Tokyo, Japan — Tohru Ozawa
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