

PREFACE

This special issue on Control, Optimization and PDE is dedicated to Professor Viorel Barbu on the occasion of his 75th birthday.

Viorel Barbu is an outstanding Romanian mathematician who has made significant contributions to control theory, partial differential equations, stochastic equations, infinite-dimensional equations and optimization. He has co-authored 12 research monographs and over 300 papers, which have had great impact on research in control, optimization, PDE and their wide range applications, and has supervised over 20 research students.

Viorel Barbu is a full member of the Romanian Academy, a member of the European Academy of Sciences, an honorary member of the Moldovian Academy of Sciences, Doctor Honoris Causa of the University of Nebraska at Omaha, Doctor Honoris Causa of the University of Pitesti, Doctor Honoris Causa of the University of Galatzi, and Doctor Honoris Causa of the University of Craiova. In 1972 he received the Simion Stoilow Prize of the Romanian Academy.

During his career he served as Chairman of the Department of Mathematics of the University of Iasi (1976-1981), Rector (President) of the University of Iasi (1981-1989), Vice President of the Romanian Academy (1998-2002), Director of the Octav Mayer Institute of Mathematics of the Romanian Academy in Iasi (1990-2011), President of the Romanian Academy Iasi Branch (2001-2012), and President of the Section of Mathematical Sciences of the Romanian Academy (2012-present).

In this special issue, we present papers authored by a selected group of experts in the areas of control, optimization and PDE. Most of the papers collected here have been contributed by former students, collaborators, friends and colleagues of Viorel, who influenced by his research. The special issue contains thirteen papers contributed by well-known experts in control, optimization and PDE from Canada, China, France, Germany, Greece, Japan, Poland, Portugal, Romania, Spain and the USA. These papers cover a wide spectrum of important problems and topics of current research interest in control, optimization and PDE such as optimal structural control of systems determined by strongly nonlinear operator valued measures, sensitivity analysis of parametric elliptic optimal control problems, travelling waves for reaction-diffusion problems, extremal solutions for quasilinear parabolic systems in trapping regions, Steklov-like eigenvalue problems, fixed points of vicinal mappings in geodesic spaces, internal feedback stabilization of a Cahn-Hilliard system, stochastic quasilinear symmetric hyperbolic system, multivalued periodic systems with maximal monotone terms, shape optimization for a fluid-elasticity system, control for the Burgers equation, Neumann boundary conditions in shape optimization and optimal shape design for 2D heat equations in large time.

Therefore we feel that this special issue will be very valuable for many mathematicians who are interested in recent developments in control, optimization and PDE as well as their numerous applications.

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