



PREFACE: ANALYSIS AND PDE, PART I

VIOREL BARBU, SIMEON REICH, LAURENT VERON, AND ALEXANDER J. ZASLAVSKI

This special issue on Analysis and PDE is dedicated to Professor Haim Brezis on the occasion of his 75th birthday.

Haim Brezis is an outstanding French mathematician who has made fundamental contributions to the fields of Functional Analysis and Partial Differential Equations. Professor Brezis wrote his Thèse de troisième cycle under the supervision of Gustave Choquet and his Thèse du Doctorat d'État under the supervision of Jacques-Louis Lions. He is Professor Emeritus at the Université Pierre-et-Marie-Curie, a Distinguished Visiting Professor at Rutgers University, and a Distinguished Visiting Professor at the Technion – Israel Institute of Technology. Since 1988, Professor Brezis has been a member of the Académie des Sciences (Paris) and of the Academia Europaea. He has also been a foreign associate of the Romanian Academy of Sciences (since 1993) and a foreign associate of the United States National Academy of Sciences (since 2003). In 2012 Haim Brezis became a fellow of the American Mathematical Society. He holds honorary doctorates from several universities including the Technion (1998) and the Alexandru Ioan Cuza University (2010), and is listed as an ISI highly cited researcher. Professor Brezis is an author of five books and more than 300 research publications, and has supervised over 60 doctoral students.

In part I of this special issue we present papers authored by a selected group of well-recognized experts in the areas of Analysis and Partial Differential Equations. Most of the papers collected here have been contributed by students, collaborators, friends and colleagues of Haim, who have been influenced by his research. This part contains ten papers contributed by researchers in Analysis and PDE from Belgium, Chile, China, France, Germany, Greece, Italy, Morocco, Portugal, Spain, and the USA.

These papers cover a wide spectrum of important problems and topics of current research interest in Analysis and PDE, including $(p, 2)$ -equations with asymmetric resonant reaction, vector-valued Sobolev maps, N -Laplacian elliptic equations in exterior domains via the Kelvin transform, estimates of the amplitude of holonomies by the curvature of a connection on a bundle, solutions of inhomogeneous equations involving Hardy potentials with singularities on the boundary, applications of monotonicity methods to a class of non-monotone parabolic quasilinear sub-homogeneous problems, multiple periodic solutions of infinite-dimensional pendulum-like equations, a nonlinear problem with a weight and a nonvanishing boundary datum, a necessary condition in a De Giorgi type conjecture for elliptic systems in infinite strips, and a generalized sequential formula for subdifferentials of multi-composed functions.

Therefore we feel that this special issue will be highly important to many mathematicians and scientists, who are interested in recent developments in Analysis and Partial Differential Equations, as well as in their numerous applications.

Viorel Barbu, Simeon Reich, Laurent Veron and Alexander J. Zaslavski, Editors

V. BARBU

University Al. I. Cuza and Institute of Mathematics Octav Mayer, Iasi, Romania

E-mail address: `vb41@uaic.ro`

SIMEON REICH

Department of Mathematics, The Technion – Israel Institute of Technology, Haifa, Israel

E-mail address: `sreich@technion.ac.il`

LAURENT VERON

Department of Mathematics, University of Tours, France

E-mail address: `veronl@univ-tours.fr`

A. J. ZASLAVSKI

Department of Mathematics, The Technion – Israel Institute of Technology, Haifa, Israel

E-mail address: `ajzasl@tx.technion.ac.il`