

PREFACE

This special Issue of *Discrete and Continuous Dynamical Systems - Series S* entitled “Fluid Dynamics and Electromagnetism: Theory and Numerical Approximation” is in honor of the two leading Italian Mathematicians Paolo Secchi and Alberto Valli and this volume contains papers that engage a wide set of modern topics in the theory of linear and nonlinear partial differential equations and their applications.

Paolo Secchi was born in 1954 in Trento (Italy) and graduated in Mathematics at the University of Trento in 1978, under the supervision of Prof. Hugo Beirão da Veiga. Since 1996 he is Full Professor in Mathematical Analysis at the University of Brescia. His research has ranged from Fluid Dynamics to the mathematical theory of Nonlinear Hyperbolic Equations and Systems. His current major interests focus on Free Boundary Problems in Fluid and Magneto-hydrodynamics and Initial-Boundary Value Problems for Hyperbolic Systems.

Alberto Valli was born in 1953 in Castelnovo nè Monti (Reggio Emilia, Italy) and graduated in Mathematics at the University of Pisa in 1975, under the supervision of Prof. Giovanni Prodi. Since 1987 he is Full Professor in Mathematical Analysis at the University of Trento. His research has ranged from Fluid Dynamics to Numerical Methods for Partial Differential Equations, his main current interests being concerned with Finite Element Methods, Computational Electromagnetism, and Domain Decomposition Methods.

Paolo Secchi and Alberto Valli are universally recognized as two of the leading experts in their respective research areas.

In addition to this Volume, in order to celebrate their 60th birthdays an international conference was held at the C.I.R.M (International Center for Mathematical Research) in Levico Terme, Italy, June 3-6 2014. The Conference was aimed at bringing together leading scientists in the fields of Fluid Dynamics and Electromagnetism and to present high level contributions on recent developments in the theory and numerical analysis of partial differential equations related to these fields. We would like to warmly thank the C.I.R.M and its staff, which support and priceless assistance made possible the realization of the Conference, contributing to its success.

As the guest editors, we are glad that *Discrete and Continuous Dynamical Systems - Series S* kindly agreed to publish this special Theme Issues in honor of Paolo Secchi and Alberto Valli. We are also very grateful to the Editor in Chief Prof. Miranville for his help, to the contributors of this Volume, as well as to the many reviewers, for their invaluable and essential support. On this occasion, we would like to express our deepest friendship to Paolo Secchi and Alberto Valli and to wish them all the best and many more productive years ahead.

Guest Editors:

A. Alonso Rodríguez, L. C. Berselli, A. Morando and P. Trebeschi