

Preface

The new challenges in Aerospace Sciences and Engineering are not limited to partial improvement of the systems available today, but the ambition is to design innovative machines with a jump forward of efficiency to reduce fuel consumption and noxious emissions or, in synthesis, to fly cleaner and quieter. Mathematics is fundamental in this respect. The series of the workshops held at the “*Ettore Majorana Foundation and Centre for Scientific Culture*” of Erice continues bringing together mathematicians and aerospace engineers coming from both Academia and Industry. Erice is a place where the dialog is easy and fruitful and young research fellows can interact and discuss in a pleasant and sophisticated scientific atmosphere.

The present volume collects most of the papers presented at the workshop “*Variational Analysis and Aerospace Engineering II*” held on 8–16 September 2010; some papers, dealing with new challenges in Aeronautics, were added in order to present a set of new problems requiring an extensive application of mathematical tools.

The editors wish to continue this series and are confident, as written in the volume published on 2009, “to capture the interest of people, . . . , particularly, young researchers working on new frontiers of mathematical application to engineering”.

This volume is dedicated to Franco Giannessi, eminent professor of Mathematics at the University of Pisa and Director of the School of Mathematics “G. Stampacchia” of the Erice Centre, on the occasion of his 75th birthday. Franco continues to be a guide to the new generations of scientists.

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