FOREWORD

This Special Issue is dedicated to celebrate Mauro Fabrizio's 70th Birthday.

It is a pleasure and an honour for us to devote it to Mauro with deep appreciation and friendship for the scientist as well as for the man.

Mauro's wide and intense research activity touched many branches of Mathematical Physics. This fact is testified by the variety of subjects studied in the contributions collected here.

Mauro was born on December 17, 1940. He graduated in Bologna in 1965. Dario Graffi, a renowned italian mathematical physicist, was his advisor. He has been full professor in the Universities of Salerno and Ferrara before returning to his Alma Mater. Since 1967 to present he published over 160 papers and 5 books.

For over 45 years, he has been greatly influential through his research contributions in a several areas of Mechanics and Thermodynamics. In particular, the development of the mathematical modeling of Complex Systems.

In these areas, starting from Dario Graffi's ideas, Mauro obtained a number of important results in mathematical modeling in continuous thermomechanics, materials with fading memory and hereditary system, electromagnetism of continuous media, first and second order phase transition models.

Mauro has always been a stimulating and open minded Colleague as well as a reliable mentor to many young scientists within the mathematical community. His deep questions and sharp remarks are well known among all the people who had the chance to have him in the audience.

Among the several Mauro's recognitions, we only recall that, on June 22, 2012, the prestigious "Premio Linceo per la Meccanica e applicazioni e Matematica" was bestowed upon him by Giorgio Napolitano, the President of the Italian Republic.

The study of complex systems is a multi-faceted area where many different mathematical tools come into play. From functional analysis to calculus of variations, from geometric analysis to semigroup theory and, of course, numerical methods.

The present volume collects 31 peer reviewed contributions of a number of leading scholars in the analysis of mathematical models. It aims to present an overview of some challenging research lines and to stimulate further investigations.

We are grateful to all the authors. They did a great job.

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