

Preface

Sebastiano Battiato¹  · **Patrizia Daniele¹** · **Giovanni Maria Farinella¹** · **Sofia Giuffrè²** · **Laura Rosa Maria Scrimali¹**

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The Special Issue focuses on variational analysis, Nash equilibrium problems and their applications to global optimization. It collects selected and refereed contributions, which provide an outline of the research field.

The volume follows the international workshop “Variational Inequalities, Nash Equilibrium Problems and Applications”, held in Catania (Italy) in the period 6–7 October 2016, where some of the works have been presented.

Recently, there has been a sharp increase in interest in variational inequalities. They are now one of the most challenging and dynamic topics of mathematics, and represent excellent tools in the study of real world problems. In fact, they cover a large variety of applications of extreme importance related to computer science, mathematical physics, engineering, statistics, economics, financial networks and generalized complementarity problems. In addition, Nash equilibrium problems, naturally associated with variational inequalities, experienced an increasing development. This has led to finding effective solutions of previously unsolved problems in numerous real life situations, such as oligopoly models, environmental problems, network problems, multiuser communication systems and infrastructure problems. Variational methods and game theory are also used in computer vision, machine learning and pattern recognition.

The aim of this special issue is to collect both theoretical and computational issues, present results having the potential of solving concrete problems, and thus try to fill the gap between theory and practice.

As guest editors, we want to warmly thank all authors who showed interest in this special issue and all the reviewers who accepted to provide their expertise and gave constructive comments. Thanks to the Editor-in-Chief of the *Journal of Global Optimization*, Professor *Sergiy Butenko*, for his continuous support. We wish all the readers a pleasant and inspiring study of the contributions of this special issue.

✉ Patrizia Daniele
daniele@dmi.unict.it

Sebastiano Battiato
battiato@dmi.unict.it

¹ University of Catania, Catania, Italy

² Mediterranean University of Reggio Calabria, Reggio Calabria, Italy