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Editorial
Variational Methods and Critical Point Theory

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Many applied problems can be understood and solved in terms of the minimization of a functional, usually related to the energy, in an appropriate functional space. Minimization and variational problems are at the interface between nonlinear analysis, calculus of variations, differential equations, and mathematical physics and play a fundamental role in the application of mathematics to real-world problems.

This special issue places its emphasis on the study and applications of variational methods and critical point theory. The editors aim for this volume was first for it to serve as a reference in the topic and second for it to collect several papers by specialists in the area and from many different countries (Algeria, China, Colombia, Czech Republic, France, Greece, Iran, Italy, Japan, Malaysia, Poland, Romania, Saudi Arabia, Spain, and Thailand).

It includes several papers on different aspects such as nonlinear elliptic equations (as an example, in the work of M. Tanaka and L. Toscano and S. Toscano), the characterization of the set of eigenvalues of nonlinear problems (as an example, in the work of P. Drábek), constrained variational equations (as an example, in the work of M. Ruiz Galán), estimation of the global attractor for evolution equations (as an example, in the work of R. Colucci and G. R. Chacón), existence of homoclinic orbits (as an example, in the work of X. He), impulsive problems (as an example, in the work of H.-R. Sun et al.), and fractional systems (as an example, in the work of J. Chen and X. H. Tang). It also contains applications to viscous flow (as an example, in the work of R. Fares et al.), non-Newtonian filtration (as an example, in the work of X. Li et al.), or oligopolistic market equilibrium (as an example, in the work of A. Barbagallo and P. Mauro).

Evidently, it is not possible to adequately represent in this special issue all directions of current research in variational methods and critical point theory, but we believe that it

reflects many important recent trends in research, indicates current challenging problems, and outlines new ideas and open problems for future studies.

The guest editors of this special issue would like to express their gratitude to the authors who have submitted papers for consideration. Thanks also to the many individuals who served as referees of the submitted papers. All the participants have made it possible to have a very stimulating interchange of ideas. We hope that these topics will stimulate future research.

We would also like to thank the editorial board members of this journal, for their support and help throughout the preparation of this special issue.

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