

Editorial

Numerical and Analytical Methods for Variational Inequalities and Related Problems 2013

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Received 15 December 2013; Accepted 15 December 2013

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The study of variational inequalities and related problems with applications constituted a rich topic of intensive research efforts within the latest 50 years. Variational inequalities problems have been found with an explosive growth in theoretical advances, algorithmic development, and applications across all the disciplines of pure and applied sciences. Analysis of these problems requires a blend of techniques from convex analysis, nonlinear functional analysis, and numerical analysis. As a result of interaction between different branches of mathematical and engineering sciences, we now have a variety of techniques to suggest and analyze various algorithms for solving variational inequalities and related optimization problems with applications.

We received 12 research papers in the research fields. This special issue includes 7 high-quality peer-reviewed papers, where five papers are related to variational inequalities and the other two papers are regarding Fourier transform and satellite data transmission scheduling problems.

The aim of this special issue has been to present the newest and generalized coverage of the fundamental and constructive ideas, concepts, and important issues in the accepted original research articles as well as comprehensive review articles stimulating the continuing efforts to numerical analysis for variational inequality problems.

In the paper by Z. B. Liu et al. a system of generalized variational inequalities has been set up for set-valued mappings by using surjectivity theorem of pseudomonotone and coercive operators.

Convergence results for total asymptotically nonexpansive mappings are given by L. C. Zhao et al. in the set of hyperbolic spaces.

Equilibrium problems and monotone inclusion problems are studied by H. C. Wu and C. Z. Cheng.

Moreover, generalized mixed equilibrium problems and fixed point problems are studied by P. Phuangphoo and P. Kumam.

Provided by L. Xie et al. methods for variational inequalities are even applied to solve order-optimization problems in Banach spaces.

Satellite data transmission scheduling problems are given by H. Xu et al.

Fast Fourier transform is also studied by J. Huang et al.

Acknowledgments

The editors would like to express their deepest gratitude to the authors for their fascinating and interesting contributions. The editors would like also to express great thanks to reviewers for their important time and valuable suggestions or comments to the make the special issue successful with high qualified published articles.

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