

Editorial

Numerical and Analytical Methods for Variational Inequalities and Related Problems with Applications

Zhenyu Huang,¹ Ram N. Mohapatra,² Muhammad Aslam Noor,³ Hong-Kun Xu,⁴ and Qingzhi Yang⁵

¹ Department of Mathematics, Nanjing University, Nanjing 210093, China

² Department of Mathematics, University of Central Florida, Orlando, FL 32816, USA

³ Mathematics Department, COMSATS Institute of Information Technology, Islamabad, Pakistan

⁴ Department of Applied Mathematics, National Sun Yat-Sen University, Kaohsiung 804, Taiwan

⁵ School of Mathematics and LPMC, Nankai University, Tianjin 300071, China

Correspondence should be addressed to Zhenyu Huang, zhenyu@nju.edu.cn

Received 23 October 2012; Accepted 23 October 2012

Copyright © 2012 Zhenyu Huang et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

The study of variational inequalities and related problems with applications constitutes a rich topic of intensive research efforts within the latest 50 years. Variational inequality theory, which was introduced by Stampacchia in 1964, has emerged as a fascinating branch of mathematical and engineering sciences with a wide range of applications in industry, finance, economics, ecology, social, regional, pure, and applied sciences. The corresponding iterative methods have witnessed great progress in recent years to handle problems in optimization problems, inverse problems, and differential equations.

We received 61 research papers in the research fields. This special issue includes 23 high-quality peer-reviewed papers. The aim of this special issue has been to present the latest 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 and fixed-point problems with applications.

In the fascinating paper by S. Saewan and P. Kumam, the existence and convergence analysis of the solutions of system of mixed variational inequalities in Banach spaces are given by using the generalized projection operator. N. Wairojjana and P. Kumam provide several general iterative methods for finding the solutions to variational inequalities. Modified block iterative methods are presented by K. Wattanawitton and P. Kumam for asymptotically relatively nonexpansive mappings and for systems of generalized mixed equilibria. In the setting of Hilbert spaces, several distinguished researchers,