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Editorial

Modeling, Analysis, and Applications of Complex Systems

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Recent advances in theory and applications of complex dynamical systems have contributed much to the successful handling of certain problems in biology, physics, economics, engineering, and so forth that until recently were thought too difficult to be analyzed. These complex systems may be characterized by systems with uncertainty, impulse, time delay, stochastic perturbation, hybrid dynamics, distributed dynamics, and chaotic dynamics. The overall aim of this special issue is to bring together the latest or innovative knowledge and advances in mathematics for handling complex systems, which may depend largely on methods from mathematical analysis, artificial intelligence, statistics, and engineering, including nonlinear dynamics, time series analysis, neural networks, and evolutionary computation. The solicited papers in this special issue should provide solutions to modeling, analysis, control, and applications of real-world complex systems. The topics in this special issue included, but are not limited to, modelling, analysis, and applications of complex systems such as impulsive systems, pulse-modulated systems, switching systems, delayed systems, discontinuous control system theory, bifurcation theory and chaotic dynamics.

The response to this special issue on modelling, analysis, and applications of complex systems was beyond our expectation. We received 39 papers in this research field. This special issue includes thirty-one high-quality peer-reviewed articles. These articles contain some new, novel, and innovative techniques and ideas that may stimulate further research in every branch of theory and applications of complex systems.

Acknowledgments

We would like to express our gratitude to the reviewers, whose professional comments and valuable suggestions guaranteed the high quality of these selected papers. Also, we appreciate the authors for their interesting and novel contributions. This work is jointly supported by the Natural Science Foundation of China with grant numbers 61374078 and 61372139.

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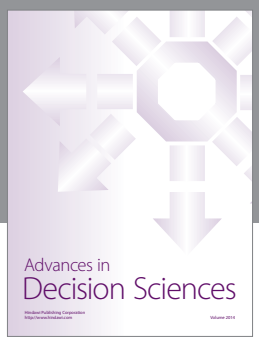

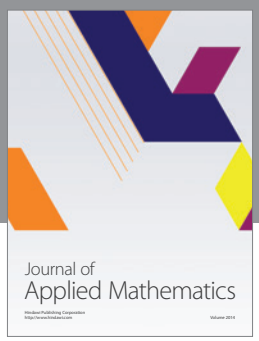

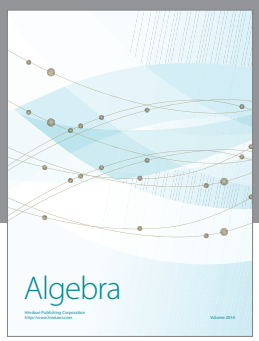

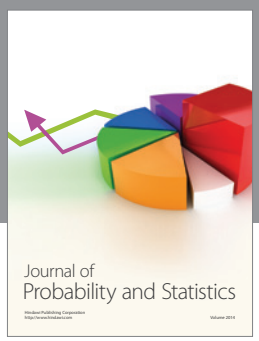

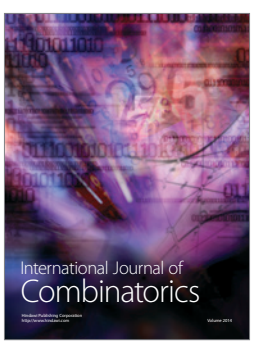

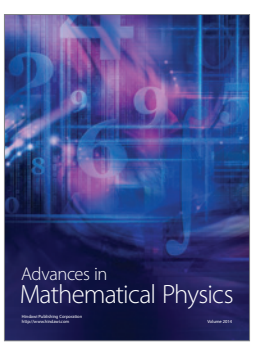

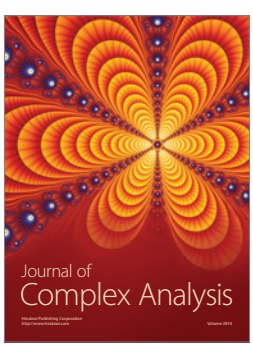

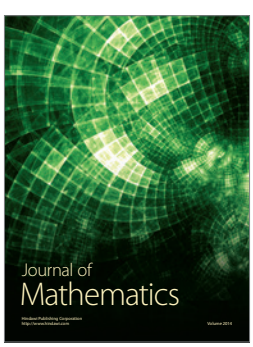

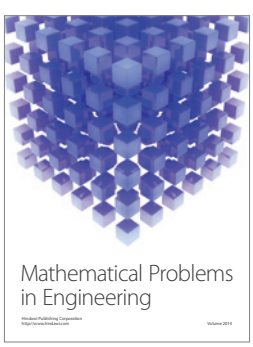

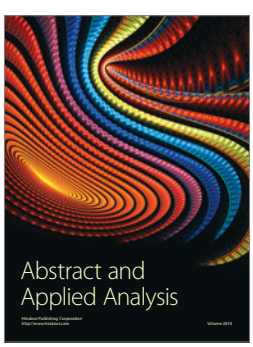

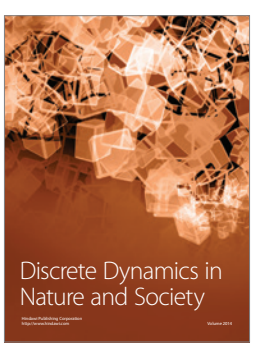

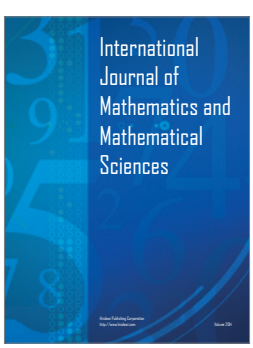

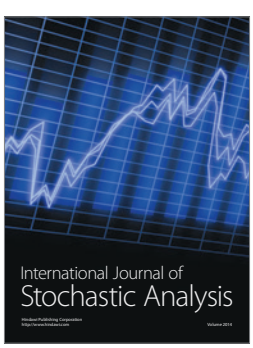

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