

Preface

The chapters in this edited book are selected from the invited lectures in *Conference on Nonlinear Dynamics and Complexity*, held at Jinan, Shandong, China, on July 23–29, 2012. The aims of this edited book are to collect recent advances in nonlinear dynamics, including analytical solutions, chaos in Hamiltonian systems, time-delay, uncertainty, and bio-network dynamics, and to stimulate further research in nonlinear dynamics and complexity. The topics in this book cover:

- (i) Nonlinear dynamics in complex networks
- (ii) Fractional maps with memory
- (iii) Accurate analytical solutions for complex motions
- (iv) Spiking neural network dynamics and biological processes
- (v) Scaling laws of human virtual motions and human actions in uncertainty
- (vi) Time-delayed nonlinear systems and noise effects

During a workshop-extended conference, the comprehensive discussions on the above topics were made, which were led by the invited recognized scientists. From such discussions, the young scientists and students learned new methods, ideas, and results. This workshop-extended conference was supported by China National Foundation of Science (Funding Number 111171192), Doctoral Program of China Ministry of Education (Funding Number 2012374110001), and Shandong Provincial Key Program of Basic Mathematics at Shandong Normal University.

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