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Advances in Nonlinear Dynamics in China

Theory and
Applications

Wenhu Huang

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ADVANCES IN NONLINEAR DYNAMICS IN CHINA

THEORY AND APPLICATIONS

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**ADVANCES IN NONLINEAR DYNAMICS
IN CHINA**

ADVANCES IN ENGINEERING

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Preface

The topic of vibration and dynamics is an old and meanwhile even new research field. The theoretical research on vibration and dynamics problems especially on nonlinear dynamics is very active in recent years since the epoch-making discovery of the phenomenon *chaos* more than thirty years ago. The rapid progress of nonlinear dynamics is also due to the high demands of modern technology and engineering in various fields such as in mechanical engineering, civil engineering, aerospace engineering, marine engineering, environment engineering, and so on. Modern technology and engineering make the research on nonlinear dynamics with plenty of vigour.

Recently considerable advances have been made in nonlinear dynamics in both theory and application in China and hundreds papers have been published in Chinese journals. A part of them are of high level, but have been seldom introduced to the West. By publishing this book in English, it is our wish to introduce the new research achievements on nonlinear dynamics in China to the world. We consider it is meaningful that the book would provide scientists, engineers and specialists who are interested in dynamics and vibration problems and vibration engineering in the West a valuable medium to understand the scientific activities on nonlinear dynamics in China and to exchange new ideas and academic experience and to find opportunities for mutual collaborations. Also the book will supply worthy references to the circles having common interests in nonlinear dynamics.

This book is a collection of representative papers published recently in the Chinese Journals <Journal of Vibration Engineering>, <Vibration and Shock> and <Journal of Nonlinear Dynamics>. The book contains 6 parts, including 20 Chapters. Part 1 is a brief summary of the achievements on nonlinear dynamics in China; Part 2 presents the phenomenon study; Part 3 and 4 outline the theory research and the experimental technique respectively; Part 5 deals with the chaos control; Part 6 presents the engineering applications.

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Harbin, China
December 2001

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