

Parameter Identification of Materials and Structures

The nature and the human creations are full of complex phenomena, which sometimes can be observed but rarely follow our hypotheses. The best we can do is to build a parametric model and then try to adjust the unknown parameters based on the available observations. This topic, called parameter identification, is discussed in this book for materials and structures. The present volume of lecture notes follows a very successful advanced school, which we had the honor to coordinate in Udine, October 6-10, 2003. The authors of this volume present a wide spectrum of theories, methods and applications related to inverse and parameter identification problems. We thank the invited lecturers and the authors of this book for their contributions, the participants of the course for their active participation and the interesting discussions as well as the people of CISM for their hospitality and their well-known professional help. Zenon Mroz Georgios E. Stavroulakis

CONTENTS

Preface An overview of enhanced modal identification by L. Bolognini 1

The reciprocity gap functional for identifying defects and cracks by H. D. Bui, A. Constantinescu and H. Maigre 17

Some innovative industrial prospects centered on inverse analyses by G. Maier, M. Bocciarelli and R. Fedele 55

Identification of damage in beam and plate structures using parameter dependent modal changes and thermographic methods by Z. Mroz and K. Dems 95

Crack and flaw identification in statics and dynamics, using filter algorithms and soft computing by G. E. Stavroulakis, M. Engelhardt and H.

The nature and the human creations are full of complex phenomena, which sometimes can be observed but rarely follow our hypotheses. The best we can do is to build a parametric model and then try to adjust the unknown parameters based on the available observations. This topic, called parameter identification, is discussed in this book for materials and structures. The present volume of lecture notes follows a very successful advanced school, which we had the honor to coordinate in Udine, October 6-10, 2003. The authors of this volume present a wide spectrum of theories, methods and applications related to inverse and parameter identification problems. We thank the invited lecturers and the authors of this book for their contributions, the participants of the course for their active participation and the interesting discussions as well as the people of CISM for their hospitality and their well-known professional help. Zenon Mroz Georgios E. Stavroulakis

CONTENTS

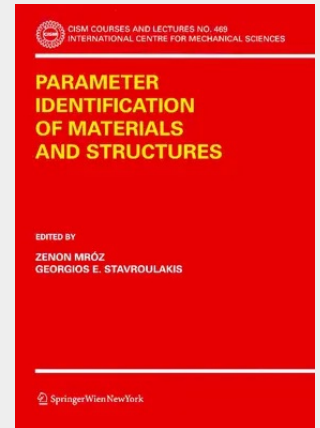
Preface An overview of enhanced modal identification by L. Bolognini 1

The reciprocity gap functional for identifying defects and cracks by H. D. Bui, A. Constantinescu and H. Maigre 17

Some innovative industrial prospects centered on inverse analyses by G. Maier, M. Bocciarelli and R. Fedele 55

Identification of damage in beam and plate structures using parameter dependent modal changes and thermographic methods by Z. Mroz and K. Dems 95

Crack and flaw identification in statics and dynamics, using filter algorithms and soft computing by G. E. Stavroulakis, M. Engelhardt and H.



106,99 €
99,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9783211301517
Medium: Buch
ISBN: 978-3-211-30151-7
Verlag: Springer Vienna
Erscheinungstermin: 24.11.2005
Sprache(n): Englisch
Auflage: 2005
Serie: CISM International Centre for Mechanical Sciences
Produktform: Kartoniert
Gewicht: 1230 g
Seiten: 340
Format (B x H): 170 x 240 mm

