

# Contents

<b>1</b>	<b>Automatic Modal Identification Based on Narrow-Band Algorithms</b> .....	<b>1</b>
	Tong Wang, F. Necati Catbas, and Lingmi Zhang	
<b>2</b>	<b>Cable Parameters for Homogenous Cable-Beam Models for Space Structures</b> .....	<b>7</b>
	Kaitlin Spak, Gregory Agnes, and Daniel Inman	
<b>3</b>	<b>Numerical Continuation Methods for the Concept of Non-linear Normal Modes</b> .....	<b>19</b>
	Martin Jerschl, Dominik Süß, and Kai Willner	
<b>4</b>	<b>Strategies for Coupled Vibration Suppression and Energy Harvesting</b> .....	<b>27</b>
	A. Cammarano, A. Gonzalez-Buelga, S.A. Neild, D.J. Inman, and S.G. Burrow	
<b>5</b>	<b>Expansion of Mode Shapes and Responses on the Offshore Platform Valdemar</b> .....	<b>35</b>
	Anders Skaftø, Ulf Tyge Tygesen, and Rune Brincker	
<b>6</b>	<b>Vibration Testing of a Floor During Multiple Phases of Construction</b> .....	<b>43</b>
	Brad Pridham	
<b>7</b>	<b>Investigation of a Slab on Grade Supporting Sensitive Equipment</b> .....	<b>53</b>
	B.R. Barben and L.M. Hanagan	
<b>8</b>	<b>Experimental Modal Analysis of a Prestressed Concrete Double-Tee Joist Roof Subject to Blast</b> .....	<b>61</b>
	Timothy P. Kernicky, Matthew J. Whelan, and David C. Weggel	
<b>9</b>	<b>Structural Evaluation of an Earthen Building from Operational Modal Analysis</b> .....	<b>71</b>
	Rafael Aguilar, Mario Solís, César Chácará, and Álvaro Ruiz	
<b>10</b>	<b>Smart Sensor Nodes for Vibration Measurement of Large Civil Infrastructure</b> .....	<b>81</b>
	Jong-Jae Lee, Young-Soo Park, Won-Tae Lee, and Chang-Geun Lee	
<b>11</b>	<b>Floor Vibrations on Healthcare Facilities: A Case Study on a Surgical Microscope</b> .....	<b>91</b>
	Omer F. Tigli	
<b>12</b>	<b>Modeling Human –Structure Interaction Using a Close Loop Control System</b> .....	<b>101</b>
	Albert R. Ortiz Lasprilla, Juan M. Caicedo, and Gustavo A. Ospina	
<b>13</b>	<b>Damage Localisation Using Symbolic Time Series Approach</b> .....	<b>109</b>
	Mehrisadat Makki Alamdari, Jianchun Li, and Bijan Samali	
<b>14</b>	<b>Automated Structural Damage Detection Using One-Class Machine Learning</b> .....	<b>117</b>
	James Long and Oral Buyukozturk	
<b>15</b>	<b>Interaction Between Humans and Structures</b> .....	<b>129</b>
	Lars Pedersen	

<b>16</b>	<b>Effects of Human –Structure Interaction from Seated Occupants on a Cantilevered Laboratory Test Structure</b> .....	135
	Kelly A. Salyards and William Brennan III	
<b>17</b>	<b>Investigating Predicted Floor Response Sensitivity to Input Forcing Function Variables</b> .....	145
	Julia M. Graham and J. Shayne Love	
<b>18</b>	<b>Vibration Performance of Bridges Made of Fibre Reinforced Polymer</b> .....	155
	S. Živanović, G. Feltrin, J.T. Mottram, and J.M.W. Brownjohn	
<b>19</b>	<b>Characterization of Human Motion Through Floor Vibration</b> .....	163
	J.M. Hamilton, B.S. Joyce, M.E. Kasarda, and P.A. Tarazaga	
<b>20</b>	<b>Vision-Based Tracking of Human Body Motion</b> .....	171
	Feng Zheng, Vitomir Racic, James M.W. Brownjohn, Mark T. Elliot, and Alan Wing	
<b>21</b>	<b>Mathematical Framework for Real-Time Hybrid Substructuring of Marine Structural Systems</b> .....	175
	Rui M. Botelho and Richard E. Christenson	
<b>22</b>	<b>Damage Detection in Civil Engineering Structure Considering Temperature Effect</b> .....	187
	V.H. Nguyen, J. Mahowald, J.-C. Golinval, and S. Maas	
<b>23</b>	<b>Damage Detection on the Z24 Bridge by a Spectral-Based Dynamic Identification Technique</b> .....	197
	Maria G. Masciotta, Luís F. Ramos, Paulo B. Lourenço, and Marcello Vasta	
<b>24</b>	<b>Nonlinear Harmonic Identification of Cracks in Structures</b> .....	207
	Oliviero Giannini, Paolo Casini, and Fabrizio Vestroni	
<b>25</b>	<b>A Strategy for Improving Performance in Real Time Hybrid Testing</b> .....	219
	Jonathan L. du Bois	
<b>26</b>	<b>Development and Performance Analysis of Single Axis Simulation Table for Durability Testing</b> .....	227
	S. Doranga and C.Q. Wu	
<b>27</b>	<b>Comparative Study of Uncertainty Quantification Metrics via a Stochastic Method of Model Validation</b> ...	235
	Sifeng Bi, Sez Atamturktur, and Zhongmin Deng	
<b>28</b>	<b>Nonlinear Identification of a Seven-Story Shear Wall Building Based on Numerically Simulated Seismic Data</b> .....	245
	Eliyar Asgariéh, Babak Moaveni, Amin Nozari, Andre R. Barbosa, and Eleni Chatzi	
<b>29</b>	<b>Structural Identification Using the Applied Element Method: Advantages and Case Study Application</b> .....	255
	Matthew J. Whelan, Timothy P. Kernicky, and David C. Weggel	
<b>30</b>	<b>Modal Scaling in OMA Using the Mass matrix of a Finite Element Model</b> .....	263
	M.L. Aenlle and R. Brincker	
<b>31</b>	<b>Identifying Structural Parameters of an Idling Offshore Wind Turbine Using Operational Modal Analysis</b> .....	271
	Paul L.C. van der Valk and Marco G.L. Ogno	
<b>32</b>	<b>Dynamic Behavior of Laminated Glass Beams</b> .....	283
	Manuel L. Aenlle, Alberto Nieto Marrón, and Pelayo Fernández	
<b>33</b>	<b>Modal Identification of Golden Gate Bridge Using Pseudo Mobile Sensing Data with STRIDE</b> .....	293
	Thomas J. Matarazzo and Shamim N. Pakzad	
<b>34</b>	<b>Removing the Influence of Rotor Harmonics for Improved Monitoring of Offshore Wind Turbines</b> .....	299
	S. Manzato, C. Devriendt, W. Weijtjens, E. Di Lorenzo, B. Peeters, and P. Guillaume	
<b>35</b>	<b>Evaluating Different Automated Operational Modal Analysis Techniques for the Continuous Monitoring of Offshore Wind Turbines</b> .....	313
	Mahmoud El-Kafafy, Christof Devriendt, Wout Weijtjens, Gert De Sitter, and Patrick Guillaume	

<b>36</b>	<b>Cable Tension Estimation Using Vision-Based Monitoring System Under Weather Conditions</b> .....	331
	Sung-Wan Kim, Nam-Sik Kim, Young-Min Kim, and Jong-Chil Park	
<b>37</b>	<b>Direct Structural Damping Identification Method</b> .....	341
	V. Arora	
<b>38</b>	<b>Modal Analysis and Numerical Models of a Typical Railway Bridge</b> .....	351
	Volkmar Zabel and Jens Gössinger	
<b>39</b>	<b>Modal and Structural Identification of a Skew, Cable Stayed, Arch Bridge</b> .....	359
	R. Alaggio, F. Benedettini, M. Dilena, and A. Morassi	
<b>40</b>	<b>A Dynamic Model for Truck-Induced Vibrations on a Cable-Stayed Bridge</b> .....	369
	T. Argentini, E. Sabbioni, and M. Vignati	
<b>41</b>	<b>Numerical Modeling and Dynamic Testing on the Oglio Flyover of the New BreBeMi Highway in Italy</b> .....	381
	Alfredo Cigada, Elena Mola, Simona Moschini, Murathan Ahmet Paksoy, Chiara Pozzuoli, and Marcello Vanali	
<b>42</b>	<b>Comparative Evaluation of Excitation Schemes for Multi-Shaker Testing of Bridges</b> .....	395
	Eric V. Fernstrom and Kirk A. Grimmelsman	
<b>43</b>	<b>Ambient Vibration Testing of the Eureka-Samoa Channel Bridge</b> .....	403
	Martin Turek, Carlos E. Ventura, Jason Dowling, Sheri Molnar, and Yavuz Kaya	
<b>44</b>	<b>Ambient Vibration Testing of the Painter St. Overpass</b> .....	411
	Martin Turek, Carlos E. Ventura, Jason Dowling, Sheri Molnar, and Yavuz Kaya	
<b>45</b>	<b>Natural Frequencies of Long-Span Suspension Bridges Subjected to Aerodynamic Loads</b> .....	419
	G. Piana, A. Manuello, R. Malvano, and A. Carpinteri	
<b>46</b>	<b>Seismic Response Control of Adjacent Buildings Connected by Viscous and Hybrid Dampers</b> .....	433
	Luis Alejandro Pérez, Suzana Avila, and Graciela Doz	
<b>47</b>	<b>Comparing Statistical Classification with a Vibro-Tactile Human–Machine Interface for Structural Health Monitoring</b> .....	441
	Jessica Block, Stephanie Djidjev, N. Jordan Jameson, and David Mascarenas	
<b>48</b>	<b>Modal Identification Tests on Archaeological Heritage: The Case of Chokepukio</b> .....	451
	Rafael Aguilar, Karim Sovero, Carol Martel, and César Chácara	
<b>49</b>	<b>Fluid-Structure Interaction Analysis of Vibration Reduction in Pipe Systems</b> .....	459
	Peter Persson, Kent Persson, and Göran Sandberg	
<b>50</b>	<b>Application of Positive Position Feedback Control Schemes in a Building-Like Structure</b> .....	469
	G. Silva-Navarro, J. Enríquez-Zárate, and M.E. Belandria-Carvajal	
<b>51</b>	<b>Active Control of Three-Dimensional Structures</b> .....	479
	Arcan Yanik, Unal Aldemir, and Mehmet Bakioglu	
<b>52</b>	<b>Dynamic Vibration Absorber Design for a Motor and Pump Assembly</b> .....	487
	C.B. Nel and J. van Wyngaardt	
<b>53</b>	<b>Design and Performance Analysis of Inerter-Based Vibration Control Systems</b> .....	493
	Irina F. Lazar, Simon A. Neild, and David J. Wagg	
<b>54</b>	<b>Using Tuned Mass Dampers to Control Imperceptible Motions</b> .....	501
	Michael J. Wesolowsky, Allan L. Raun, Ramin Behboudi, and John C. Swallow	
<b>55</b>	<b>A Simplified Approach for the Dynamic Analysis of High-Rise Structures</b> .....	509
	Alberto Carpinteri and Sandro Cammarano	
<b>56</b>	<b>A Machine Learning Approach to Nonlinear Modal Analysis</b> .....	521
	K. Worden and P.L. Green	

Dynamics of Civil Structures, Volume 4  
Proceedings of the 32nd IMAC, A Conference and  
Exposition on Structural Dynamics, 2014  
Catbas, F.N. (Ed.)  
2014, IX, 528 p. 464 illus., Hardcover  
ISBN: 978-3-319-04545-0