## Contents

1. **The George E. Brown, Jr., Network for Earthquake Engineering Simulation (NEES): Reducing the Impact of EQs and Tsunamis** .......................... 1
   Julio A. Ramirez

2. **A Faceted Lightweight Ontology for Earthquake Engineering Research Projects and Experiments** .................................................. 11
   Rashedul Hasan, Feroz Farazi, Oreste Salvatore Bursi and Md Shahin Reza

3. **The SERIES Virtual Database: Architecture and Implementation** ...... 21
   Ignacio Lamata Martínez, Ioannid Ioannidis, Christos Fidas, Martin S. Williams and Pierre Pegon

4. **The SERIES Virtual Database: Exchange Data Format and Local/Central Databases** ................................................................. 31
   Anna Bosi, Ilias Kotinas, Ignacio Lamata Martínez, Stathis Bousias, Jean Louis Chazelas, Martin Dietz, Rashedul Hasan, Gopal S. P. Madabhushi, Andrea Prota, Anthony Blakeborough and Pierre Pegon

5. **Qualification of Seismic Research Testing Facilities in Europe** ........... 49
   Maurizio A. Zola and Fabio Taucer

6. **Towards Faster Computations and Accurate Execution of Real-Time Hybrid Simulation** ................................................................. 65
   Khalid M. Mosalam and Selim Günay

7. **Pseudo-Dynamic Testing Based on Non-linear Dynamic Substructuring of a Reinforced Concrete Bridge** ............................................. 83
   Giuseppe Abbiati, Oreste Salvatore Bursi, Enrico Cazzador, Rosario Ceravolo, Zhu Mei, Fabrizio Paolacci and Pierre Pegon
8 Geographically Distributed Continuous Hybrid Simulation Tests Using Shaking Tables .................................................. 99
Ferran Obón Santacana and Uwe E. Dorka

9 Hybrid Simulations of a Piping System Based on Model Reduction Techniques .................................................. 117
Md Shanin Reza, Giuseppe Abbiati, Alessio Bonelli and Oreste S. Bursi

10 A Support Platform for Distributed Hybrid Testing .................. 133
Ignacio Lamata Martínez, Ferran Obón Santacana, Martin S. Williams, Anthony Blakeborough and Uwe E. Dorka

11 Substructuring for Soil Structure Interaction Using a Shaking Table ........................................................................ 141
Matthew Dietz, Zhenyun Tang, Colin Taylor and Zhenbao Li

12 On the Control of Shaking Tables in Acceleration Mode: An Adaptive Signal Processing Framework .......................... 159
Vasileios K. Dertimanis, Harris P. Mouzakis and Ioannis N. Psycharis

13 Refined and Simplified Numerical Models of an Isolated Old Highway Bridge for PsD Testing .................................... 173
Fabrizio Paolacci, Luigi Di Sarno, Raffaele De Risi, Giuseppe Abbiati, Arkam Mohammad Zeki Mohamad, Marialaura Malena and Daniele Corritore

14 Assessment of the Seismic Behaviour of a Retrofitted Old R.C. Highway Bridge Through PsD Testing ................................. 199
Fabrizio Paolacci, Luigi Di Sarno, Pierre Pegon, Francisco Javier Molina, Martin Poljansek, Oreste Salvatore Bursi, Giuseppe Abbiati, Rosario Ceravolo, Mustafa Erdik, Raffaele De Risi and Arkam Mohammad Zeki Mohamad

15 Full-scale Testing of Modern Unreinforced Thermal Insulation Clay Block Masonry Houses .................................................. 229
Andreas Jäger, Suikai Lu, Hervé Degée, Christophe Mordant, Ambra Chioccariello, Zoran T. Rakicevic, Veronika Sendova, Luís Mendes, Paulo Candeias, Alfredo Campos Costa, António A. Correia and Ema Coelho

16 Assessment of Innovative Solutions for Non-Load Bearing Masonry Enclosures .......................................................... 247
João Leite, António A. Correia, Paulo B. Lourenço, Elizabeth Vintzileou, Vasiliki Palieraki, Paulo Candeias, Alfredo Campos Costa and Ema Coelho
17 Seismic Behaviour of Thin-Bed Layered Unreinforced Clay Masonry Frames with T- or L-Shaped Piers ............................................. 269
Christophe Mordant, Matthew Dietz, Colin Taylor and Hervé Degée

18 Shake Table Testing of a Half-Scaled RC-URM Wall Structure ....... 295
Marco Tondelli, Sarah Petry, Igor Lanese, Simone Peloso and Katrin Beyer

19 Experimental and Numerical Investigation of Torsionally Irregular RC Shear Wall Buildings with Rutherma Breakers .......... 307
Ahmet Yakut, Alain Le Maoult, Benjamin Richard, Gabriela M. Atanasiu,
Frederic Ragueneau, Stefen Scheer and Seref Diler

20 Assessment of the Seismic Response of Concentrically-Braced Steel Frames .............................................................................. 327
Brian M. Broderick, Jamie Goggins, Darko Beg, Ahmed Y. Elghazouli,
Philippe Mongabure, Alain Le Maoult, Alan Hunt, Suhaib Salawdeh, Primoz Moze, Gerard O’Reilly and Franc Sinur

21 Shaking Table Test Design to Evaluate Earthquake Capacity of a 3-Storey Building Specimen Composed of Cast-In-Situ Concrete Walls ............................................................................................................................................. 345
Salvador Ivorra, Dora Foti, Ilaria Ricci, Giada Gasparini, Stefano Silvestri
and Tomaso Trombetti

22 High-Performance Composite-Reinforced Earthquake Resistant Buildings with Self-Aligning Capabilities ............................................... 359
Bohumil Kasal, Tiberiu Polocoser, Pablo Guindos, Shota Urushadze,
Stanislav Pospisil, Andreas Heiduschke, Norbert Rüther
and Zbigniew Zembaty

23 Experimental Study on Seismic Performance of Precast Concrete Shear Wall with Joint Connecting Beam Under Cyclic Loadings ......................................................................................................................... 373
Xilin Lu, Dun Wang and Bin Zhao

24 The Importance of connections in Seismic Regions: Full-Scale Testing of a 3-Storey Precast Concrete Building ......................... 387
Dionysios Bournas, Paolo Negro and Francisco Javier Molina

25 Caisson Foundations Subjected to Seismic Faulting: Reduced-Scale Physical Modeling .............................................................. 405
Ioannis Anastasopoulos, Orestis Zarzouras, Vasileios Drosos
and George Gazetas
<table>
<thead>
<tr>
<th>Page</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>Development of New Infinite Element for Numerical Simulation of Wave Propagation in Soil Media</td>
<td>Vlatko Sesov, Mihail Garevski, Kemal Edip and Julijana Bojadjieva</td>
</tr>
<tr>
<td>29</td>
<td>Centrifuge Modeling of Dynamic Behavior of Box Shaped Underground Structures in Sand</td>
<td>Deniz Ulgen, Selman Saglam, M. Yener Ozkan and Jean Louis Chazelas</td>
</tr>
<tr>
<td>30</td>
<td>Dynamic Response of Shallow Rectangular Tunnels in Sand by Centrifuge Testing</td>
<td>Grigorios Tsinidis, Emmanouil Rovithis, Kyriazis Pitilakis and Jean Louis Chazelas</td>
</tr>
<tr>
<td>31</td>
<td>Centrifuge Modelling of the Dynamic Behavior of Square Tunnels in Sand</td>
<td>Grigorios Tsinidis, Charles Heron, Kyriazis Pitilakis and Gopal S. P. Madabhushi</td>
</tr>
<tr>
<td>32</td>
<td>FLIQ: Experimental Verification of Shallow Foundation Performance Under Earthquake-Induced Liquefaction</td>
<td>George D. Bouckovalas, Dimitris K. Karamitros, Gopal S. P. Madabhushi, Ulas Cilingir, Achilleas G. Papadimitriou and Stuart K. Haigh</td>
</tr>
<tr>
<td>33</td>
<td>Centrifuge Modelling of Retaining Walls Embedded in Saturated Sand Under Seismic Actions</td>
<td>Stefano Aversa, Luca de Sanctis, Rosa Maria Stefania Maiorano, Michele Tricarico, Giulia Viggiani, Riccardo Conti and Gopal S. P. Madabhushi</td>
</tr>
<tr>
<td>34</td>
<td>Experimental and Numerical Investigations of Nonlinearity in Soils Using Advanced Laboratory-Scaled Models (ENINALS Project): From a Site-Test to a Centrifuge Model</td>
<td>Francesca Bozzano, Salvatore Martino, Alberto Prestininzi, Gabriele Searascia-Mugnozza, Luis Fabian Bonilla, Alberto Bretschneider, Jean Louis Chazelas, Sandra Escoffier, Luca Lenti and Jean-François Semblat</td>
</tr>
</tbody>
</table>
35 Damping Estimation from Seismic Records
Dionisio Bernal

579

36 Development of Wireless Sensors for Shake Table and Full Scale Testing and Health Monitoring of Structures
Zoran T Rakicevic, Igor Markovski, Dejan Filipovski, Slobodan Micajkov and Mihail Garevski

595

Index

611
Experimental Research in Earthquake Engineering
EU-SERIES Concluding Workshop
Taucer, F.; Apostolska, R. (Eds.)
2015, XXVII, 614 p. 463 illus., Hardcover
ISBN: 978-3-319-10135-4