

Contents

1D Harmonic Response of Layered Inhomogeneous Soil: Exact and Approximate Analytical Solutions	1
George E. Mylonakis, Emmanouil Rovithis, and Haralambos Parashakis	
Monitored Incoherency Patterns of Seismic Ground Motion and Dynamic Response of a Long Cable-Stayed Bridge	33
Vassilios Lekidis, Savvas Papadopoulos, Christos Karakostas, and Anastasios Sextos	
An Efficient Beam-Column Element for Inelastic 3D Frame Analysis . . .	49
Svetlana M. Kostic, Filip C. Filippou, and Chin-Long Lee	
Floor Response Spectra for Moderately Heavy Nonstructural Elements Attached to Ductile Frame Structures	69
Christoph Adam, Thomas Furtmüller, and Lukas Moschen	
Seismic Assessment of Steel Moment Frames Using Simplified Nonlinear Models	91
Dimitrios G. Lignos, Christopher Putman, and Helmut Krawinkler	
Preliminary Seismic Assessment Method for Identifying R.C. Structural Failures	111
Stylianos J. Pardalopoulos, Georgia E. Thermou, and Stavroula J. Pantazopoulou	
Numerical Determination of the Seismic Strength of Reinforced Concrete Shear Walls with Fractal Cracks	129
O. Panagouli, E. Mistakidis, and K. Iordanidou	
Damage Analysis of Reinforced Concrete Structures with Substandard Detailing	149
Panagiotis E. Mergos and Andreas J. Kappos	

Seismic Evaluation of Existing Basement Walls	177
Mahdi Taiebat, W.D. Liam Finn, Alireza Ahmadnia, Elnaz Amirzehni, and Carlos E. Ventura	
Modeling of Infilled Framed Structures	197
Panagiotis G. Asteris, Christis Z. Chrysostomou, Ioannis Giannopoulos, and Paolo Ricci	
Numerical Evaluation of the Seismic Efficiency of Connections of Fractures and Complements of Ancient Colonnades	225
Maria-Eleni Dasiou, Ioannis N. Psycharis, and Antigone Vrouva	
Seismic Overturning of Rocking Structures with External Viscous Dampers	243
Elias G. Dimitrakopoulos and Matthew J. DeJong	
Innovative Computing Environment for Fast and Accurate Prediction of Approximate IDA Curves	259
Iztok Peruš, Robert Klinc, Matevž Dolenc, and Matjaž Dolšek	
Improving Static Pushover Analysis by Optimal Bilinear Fitting of Capacity Curves	273
Flavia De Luca, Dimitrios Vamvatsikos, and Iunio Iervolino	
Collapse Fragility Curves of RC Frames with Varying Design Parameters	297
Ilias A. Gkimousis and Vlas K. Koumousis	
Seismic Risk Assessment of Italian School Buildings	317
Barbara Borzi, Paola Ceresa, Marta Faravelli, Emilia Fiorini, and Mauro Onida	
Nonlinear Dynamic Response of MDOF Cable Nets Estimated by Equivalent SDOF Models	345
Isabella Vassilopoulou and Charis J. Gantes	
Non-linear Model of a Ball Vibration Absorber	381
Jiří Náprstek, Cyril Fischer, Miroš Pirner, and Ondřej Fischer	
Evaluation of Response of an Isolated System Based on Double Curved Surface Sliders	397
Chiara Casarotti, Marco Furinghetti, and Alberto Pavese	
Numerical Investigation of the Effectiveness of Rubber Shock-Absorbers as a Mitigation Measure for Earthquake-Induced Structural Poundings	417
Panayiotis C. Polycarpou and Petros Komodromos	
Seismic Design Methodology for Control of 3D Buildings by Means of Multiple Tuned-Mass-Dampers	437
Oren Lavan and Yael Daniel	

Comparison of Innovative Base Isolation Retrofitting Technology with Conventional Retrofitting of Existing Buildings	461
Mikayel Melkumyan	
Preliminary Design of Seismically Isolated R/C Bridges—Features of Relevant Expert System and Experimental Testing of Elastomeric Bearings	491
George C. Manos and Stergios A. Mitoulis	
Soft Computing in Structural Dynamics	521
T. Burczyński, R. Górski, A. Poteralski, and M. Szczepanik	
Optimal Design of RC Frames Using Nonlinear Inelastic Analysis	545
Bora Gencturk and Kazi Ashfaq Hossain	
Nonsmooth and Nonconvex Optimization for the Design and Order Reduction of Robust Controllers Used in Smart Structures	569
A.J. Moutsopoulou, A.T. Pouliezos, and G.E. Stavroulakis	
A Risk-Based Decision Making Methodology for Planning and Operating Safe Infrastructure Systems Against Various Hazards . . .	591
Yiannis Xenidis and Demos C. Angelides	
On Practical Performance of a Technique for More Efficient Dynamic Analysis in View of Real Seismic Analysis of Bridge Structures . . .	613
Aram Soroushian, Akbar Vasseghi, and Mahmood Hosseini	
Author Index	635

Computational Methods in Earthquake Engineering
Volume 2

Papadrakakis, M.; Fragiadakis, M.; Plevris, V. (Eds.)

2013, XV, 636 p., Hardcover

ISBN: 978-94-007-6572-6