Table of Contents

Preface

Chapter 1
On the mechanical behaviour of masonry
  Vasilis Sarhosis, Newcastle University, UK
  D.V. Oliveira, University of Minho, Portugal
  P.B. Lourenco, University of Minho, Portugal

Chapter 2
Micro-modeling options for masonry
  Vasilis Sarhosis, Newcastle University, UK

Chapter 3
The basis for masonry analysis with UDEC and 3DEC
  José V. Lemos, LNEC - Laboratorio Nacional de Engenharia Civil, Portugal

Chapter 4
The DDA Method
  Katalin Bagi, Budapest University of Technology and Economics, Hungary

Chapter 5
The Contact Dynamics Method
  Katalin Bagi, Budapest University of Technology and Economics, Hungary

Chapter 6
Introduction to the combined finite-discrete element method
  Máté Hazay, Budapest University of Technology and Economics, Hungary
  Ante Munjiza, Queen Mary University of London, UK

Chapter 7
Discrete element particle modelling of stone masonry
  Nuno Monteiro Azevedo, LNEC, Portugal
  José V. Lemos, LNEC, Portugal
  João Rocha de Almeida, Faculty of Science and Technology, Universidade NOVA de Lisboa, Portugal

Chapter 8
Numerical modelling of masonry dams using the Discrete Element Method
  Eduardo Martins Bretas, Northern Research Institute, Norway
Chapter 9
Discrete Element Modeling of Masonry-Infilled Frames
Amin Mohebkhah, Malayer University, Iran
Vasilis Sarhosis, Newcastle University, UK

Chapter 10
Vulnerability assessment of damaged classical multidrum columns
Michalis Fragiadakis, National Technical University of Athens, Greece
Ioannis Stefanou, Université Paris-Est, Laboratoire Navier (UMR 8205), CNRS, ENPC, IFSTTAR, France
Ioannis N Psycharis, National Technical University of Athens, Greece

Chapter 11
Numerical study of discrete masonry structures under static and dynamic loading
Rossana Dimitri, Università del Salento, Italy
Giorgio Zavarise, Università del Salento, Italy

Chapter 12
Validation of the Discrete Element Method for the Limit Stability Analysis of Masonry Arches
Haris Alexakis, University of Patras, Greece
Nicos Makris, University of Central Florida, USA

Chapter 13
Application of DEM to historic masonries: Águas Livres aqueduct in Lisbon and multi-leaves arch-tympana of San Fedele in Como
Alberto Drei, Department ABC, Technical University of Milan, Italy
Gabriele Milani, Department ABC, Technical University of Milan, Italy
Gabriela Sincraian, Vancouver Strategy Deployment Team, Vancouver Coastal Health, Vancouver, Canada

Chapter 14
FEM/DEM Approach for the analysis of masonry arch bridges
Emanuele Reccia, University IUAV of Venice, Italy
Antonella Cecchi, University IUAV of Venice, Italy
Gabriele Milani, Technical University of Milan, Italy

Chapter 15
Discrete Finite Element Method for Analysis of Masonry Structures
Iraj H.P. Mamaghani, University of North Dakota, USA

Chapter 16
A semi-discrete approach for the numerical simulation of free standing blocks
Fernando Peña, Instituto de Ingeniería, Universidad Nacional Autónoma de Mexico, Mexico
Chapter 17
Application of Discrete Finite Element Method for Analysis of Unreinforced Masonry Structures
Iraj H.P. Mamaghani, University of North Dakota, USA