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KEY=ENGINEERING - ALEENA POWELL

RECENT ADVANCES IN EARTHQUAKE ENGINEERING IN EUROPE

16TH EUROPEAN CONFERENCE ON EARTHQUAKE ENGINEERING-THESSALONIKI 2018

Springer This book is a collection of invited lectures including the 5th Nicholas Ambraseys distinguished lecture, four keynote lectures and twenty-two thematic lectures presented at the 16th European Conference on Earthquake Engineering, held in Thessaloniki, Greece, in June 2018. The lectures are put into chapters written by the most prominent internationally recognized academics, scientists, engineers and researchers in Europe. They address a comprehensive collection of state-of-the-art and cutting-edge topics in earthquake engineering, engineering seismology and seismic risk assessment and management. The book is of interest to civil engineers, engineering seismologists, seismic risk managers, policymakers and consulting companies covering a wide spectrum of fields from geotechnical and structural earthquake engineering, to engineering seismology and seismic risk assessment and management. Scientists, professional engineers, researchers, civil protection policymakers and students interested in the seismic design of civil engineering structures and infrastructures, hazard and risk assessment, seismic mitigation policies and strategies, will find in this book not only the most recent advances in the state-of-the-art, but also new ideas on future earthquake engineering and resilient design of structures. Chapter 1 of this book is available open access under a CC BY 4.0 license.

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PERSPECTIVES ON EUROPEAN EARTHQUAKE ENGINEERING AND SEISMOLOGY

Springer This book collects 5 keynote and 15 topic lectures presented at the 2nd European Conference on Earthquake Engineering and Seismology (2ECEES), held in Istanbul, Turkey, from August 24 to 29, 2014. The conference was organized by the Turkish Earthquake Foundation - Earthquake Engineering Committee and Prime Ministry, Disaster and Emergency Management Presidency under the auspices of the European Association for Earthquake Engineering (EAEE) and European Seismological Commission (ESC). The book's twenty state-of-the-art papers were written by the most prominent researchers in Europe and address a comprehensive collection of topics on earthquake engineering, as well as interdisciplinary subjects such as engineering seismology and seismic risk assessment and management. Further topics include engineering seismology, geotechnical earthquake engineering, seismic performance of buildings, earthquake-resistant engineering structures, new techniques and technologies and managing risk in seismic regions. The book also presents the Third Ambraseys Distinguished Award Lecture given by Prof. Robin Spence in honor of Prof. Nicholas N. Ambraseys. The aim of this work is to present the state-of-the-art and latest practices in the fields of earthquake engineering and seismology, with Europe's most respected researchers addressing recent and ongoing developments while also proposing innovative avenues for future research and development. Given its cutting-edge content and broad spectrum of topics, the book offers a unique reference guide for researchers in these fields. Audience: This book is of interest to civil engineers in the fields of geotechnical and structural earthquake engineering; scientists and researchers in the fields of seismology, geology and geophysics. Not only scientists, engineers and students, but also those interested in earthquake hazard assessment and mitigation will find in this book the most recent advances.

PERSPECTIVES ON EUROPEAN EARTHQUAKE ENGINEERING AND SEISMOLOGY

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EARTHQUAKE ENGINEERING IN EUROPE

Springer Science & Business Media This book contains 9 invited keynote and 12 theme lectures presented at the 14th European Conference on Earthquake Engineering (14ECEE) held in Ohrid, Republic of Macedonia, from August 30 to September 3, 2010. The conference was organized by the Macedonian Association for Earthquake Engineering (MAEE), under the auspices of European Association for Earthquake Engineering (EAEE). The book is organized in twenty one state-of-the-art papers written by carefully selected very eminent researchers mainly from Europe but also from USA and Japan. The contributions provide a very comprehensive collection of topics on earthquake engineering, as well as interdisciplinary subjects such as engineering seismology and seismic risk assessment and management. Engineering seismology, geotechnical earthquake engineering, seismic performance of buildings, earthquake resistant engineering structures, new techniques and technologies and managing risk in seismic regions are all among the different topics covered in this book. The book also includes the First Ambraseys Distinguished Award Lecture given by Prof. Theo P. Tassios in the honor of Prof. Nicholas N. Ambraseys. The aim is to present the current state of knowledge and engineering practice, addressing recent and ongoing developments while also projecting innovative ideas for future research and development. It is not always possible to have so many selected manuscripts within the broad spectrum of earthquake engineering thus the book is unique in one sense and may serve as a good reference book for researchers in this field. Audience: This book will be of interest to civil engineers in the fields of geotechnical and structural earthquake engineering; scientists and researchers in the fields of seismology, geology and geophysics. Not only scientists, engineers and students, but also those interested in earthquake hazard assessment and mitigation will find in this book the most recent advances.

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PERSPECTIVES ON EUROPEAN EARTHQUAKE ENGINEERING AND SEISMOLOGY

VOLUME 2

Springer This book collects 4 keynote and 15 theme lectures presented at the 2nd European Conference on Earthquake Engineering and Seismology (2ECEES), held in Istanbul, Turkey, from August 24 to 29, 2014. The conference was organized by the Turkish Earthquake Foundation - Earthquake Engineering Committee and Prime Ministry, Disaster and Emergency Management Presidency under the auspices of the European Association for Earthquake Engineering (EAEE) and European Seismological Commission (ESC). The book's nineteen state-of-the-art chapters were written by the most prominent researchers in Europe and address a comprehensive collection of topics on earthquake engineering, as well as interdisciplinary subjects such as engineering seismology and seismic risk assessment and management. Further topics include engineering seismology, geotechnical earthquake engineering, seismic performance of buildings, earthquake-resistant engineering structures, new techniques and technologies, and managing risk in seismic regions. The book also presents the First Professor Inge Lehmann Distinguished Award Lecture given by Prof. Shamita Das in honor of Prof. Dr. Inge Lehmann. The aim of this work is to present the state-of-the-art and latest practices in the fields of earthquake engineering and seismology, with Europe's most respected researchers addressing recent and ongoing developments while also proposing innovative avenues for future research and development. Given its cutting-edge content and broad spectrum of topics, the book offers a unique reference guide for researchers in these fields. Audience: This book is of interest to civil engineers in the fields of geotechnical and structural earthquake engineering; scientists and researchers in the fields of seismology, geology and geophysics. Not only scientists, engineers and students, but also those interested in earthquake hazard assessment and mitigation will find in this book the most recent advances.

EXPERIMENTAL RESEARCH IN EARTHQUAKE ENGINEERING

EU-SERIES CONCLUDING WORKSHOP

Springer In this volume, top seismic experts and researchers from Europe and around the world, including the George E. Brown, Jr. Network for Earthquake Engineering Simulation (NEES) in the USA, present the most recent outcome of their work in experimental testing, as well as the results of the transnational access activities of external researchers who have used Europe's seven largest and most advanced seismic testing facilities in the framework of the Seismic Engineering Research Infrastructures for European Synergies (SERIES) Project financed by the European Commission in its 7th Framework Programme (2007-2013). This includes EU's largest reaction wall facility, EU's four largest shaking table laboratories and its two major centrifuges. The work presented includes state-of-the-art research towards the seismic design, assessment and retrofitting of structures, as well as the development of innovative research toward new fundamental technologies and techniques promoting efficient and joint use of the research infrastructures. The contents of this volume demonstrate the fruits of the effort of the European Commission in supporting research in earthquake engineering.

PROGRESSES IN EUROPEAN EARTHQUAKE ENGINEERING AND SEISMOLOGY

THIRD EUROPEAN CONFERENCE ON EARTHQUAKE ENGINEERING AND SEISMOLOGY - BUCHAREST, 2022

Springer Nature This book encompasses the most challenging topics in earthquake engineering and seismology aiming at seismic risk reduction and reveals the outstanding progresses made in Europe in the past four years. Earthquakes pose a significant threat to countries around the world. But, equipped with the right knowledge and tools, engineers and seismologists can support policy and decision makers and building officials in creating a safer future for all of us. In this paradigm, the Third European Conference on Earthquake Engineering and Seismology (3ECEES) is organized in Bucharest (Romania) in September 2022 by the Romanian Association for Earthquake Engineering, Technical University of Civil Engineering of Bucharest and National Institute for Earth Physics. This outstanding scientific event is the third in a series started in 2006 in Geneva, Switzerland and continued in 2014 in Istanbul, Turkey. The papers included in this book are written by the most prominent contemporary European scholars in the two-folded fields of 3ECEES. The Distinguished Nicholas Ambraseys, along with 28 invited lectures providing the best knowledge in the fields of earthquake engineering and seismology, are shared with the general readership of this book. The book is organized in three parts, as follows: (1) Seismicity, engineering seismology and seismic hazard, (2) Seismic risk assessment and mitigation, and (3) Structural earthquake engineering. The 29 contributed papers for this book are shared among these three parts almost equally. Chapter "The Challenge of the Integrated Seismic Strengthening and Environmental Upgrading of Existing Buildings" is available open access under a Creative Commons Attribution 4.0 International License via link.springer.com.

RECENT ADVANCES IN EARTHQUAKE GEOTECHNICAL ENGINEERING AND MICROZONATION

Springer Science & Business Media Outstanding advances have been achieved on Earthquake Geotechnical Engineering and Microzonation in the last decade mostly due to the increase in the recorded instrumental in-situ data and large number of case studies conducted in analyzing the observed effects during the recent major earthquakes. During the 15th International Conference on Soil Mechanics and Geotechnical Engineering held in Istanbul in August 2001, the Technical Committee of Earthquake Geotechnical Engineering, (TC4) of the International Society of Soil Mechanics and Geotechnical Engineering organised a regional seminar on Geotechnical Earthquake Engineering and Microzonation where an effort has been made to present the recent advances in the field by eminent scientists and researchers. The book idea was first suggested by the participants of this seminar. The purpose of this book as well as of the seminar was to present the broad spectrum of earthquake geotechnical engineering and seismic microzonation including strong ground motion, site characterisation, site effects, liquefaction, seismic microzonation, solid waste landfills and foundation engineering. The subject matter requires multidisciplinary input from different fields of engineering seismology, soil dynamics, geotechnical and structural engineering. The chapters in this book are prepared by some of the distinguished lecturers who took part in the seminar supplemented with contributions of few distinguished experts in the field of earthquake geotechnical engineering. The editor would like to express his gratitude to all authors for their interest and efforts in preparing their manuscripts. Without their enthusiasm and support, it would not have been possible to complete this book.

ADVANCES IN EARTHQUAKE ENGINEERING FOR URBAN RISK REDUCTION

Springer Science & Business Media Earthquakes affecting urban areas can lead to catastrophic situations and hazard mitigation requires preparatory measures at all levels. Structural assessment is the diagnosis of the seismic health of buildings. Assessment is the prelude to decisions about rehabilitation or even demolition. The scale of the problem in dense urban settings brings about a need for macro seismic appraisal procedures because large numbers of existing buildings do not conform to the increased requirements of new earthquake codes and specifications or have other deficiencies. It is the vulnerable buildings - liable to cause damage and loss of life - that need immediate attention and urgent appraisal in order to decide if structural rehabilitation and upgrading are feasible. Current economic, efficient and occupant-friendly rehabilitation techniques vary widely and include the application either of precast concrete panels or layers, strips and patches of fiber reinforced polymers (FRP) in strategic locations. The papers in this book, many by renowned authorities in earthquake engineering, chart new and vital directions of research and application in the assessment and rehabilitation of buildings in seismic regions. While several papers discuss the probabilistic prediction and quantification of structural damage, others present approaches related with the in-situ and occupant friendly upgrading of buildings and propose both economical and practical techniques to address the problem.

ADVANCES IN ASSESSMENT AND MODELING OF EARTHQUAKE LOSS

Springer Nature This open access book originates from an international workshop organized by Turkish Natural Catastrophe Insurance Pool (TCIP) in November 2019 that gathered renown researchers from academia, representatives of leading international reinsurance and modeling companies as well as government agencies responsible of insurance pricing in Turkey. The book includes chapters related to post-earthquake damage assessment, the state-of-art and novel earthquake loss modeling, their implementation and implication in insurance pricing at national, regional and global levels, and the role of earthquake insurance in building resilient societies and fire following earthquakes. The rich context encompassed in the book makes it a valuable tool not only for professionals and researchers dealing with earthquake loss modeling but also for practitioners in the insurance and reinsurance industry.

EARTHQUAKE ENGINEERING

12TH EUROPEAN CONFERENCE, 9-13TH SEPTEMBER 2002, LONDON, UK

Elsevier Science Limited A Turkish widow, dressed from head to toe in black, stood near to the heap of fractured concrete and twisted reinforcement that had claimed the lives of her family. She saw the two English engineers who had come to examine the aftermath of the Kocaeli Earthquake and she had a question for them. In a quiet, slightly trembling voice she asked, "Neden?" - "Why?" Her question is the same as that of the vast numbers of people who, in recent decades, have lost family and friends, homes and livelihoods, health and well-being to the destructive power of earthquakes. The question is deceptively simple - the answer is complex and multi-layered. But it is the right question. This conference forms part of the response. Impressive advances have occurred in our understanding of the factors (technical and human) that determine the impact of seismic events. With the papers on this CD you will find developments in seismology and improvements in our understanding of site effects. The lessons of recent earthquakes are discussed leading to better understanding of vulnerability and improved mitigation strategies. The recent rapid strides in seismic code development are presented together with improved methods of structural analysis and testing. Novel techniques and applications for improving the earthquake resistance of structures and infrastructure are considered. The more we know, the more we realise we have yet to understand. However, we can be sure that communities across Europe and our neighbours in other parts of the 'Global Village' will continue to be menaced by savage earthquakes. Our developing knowledge of earthquake science, engineering and mitigation brings with it responsibility. We each have a responsibility to redouble our efforts so that no longer will people with shattered lives have to ask, "Why?" Dr Robert E May Chairman of Conference Organising Committee 12th European Conference on Earthquake Engineering

ENERGY-BASED SEISMIC ENGINEERING

PROCEEDINGS OF IWEBSE 2021

[Springer Nature](#) This volume gathers the latest advances, innovations, and applications in the field of seismic engineering, as presented by leading researchers and engineers at the 1st International Workshop on Energy-Based Seismic Engineering (IWEBSE), held in Madrid, Spain, on May 24-26, 2021. The contributions cover a diverse range of topics, including energy-based EDPs, damage potential of ground motion, structural modeling in energy-based damage assessment of structures, energy dissipation demand on structural components, innovative structures with energy dissipation systems or seismic isolation, as well as seismic design and analysis. Selected by means of a rigorous peer-review process, they will spur novel research directions and foster future multidisciplinary collaborations.

ROLE OF SEISMIC TESTING FACILITIES IN PERFORMANCE-BASED EARTHQUAKE ENGINEERING

SERIES WORKSHOP

[Springer Science & Business Media](#) Nowadays research in earthquake engineering is mainly experimental and in large-scale; advanced computations are integrated with large-scale experiments, to complement them and extend their scope, even by coupling two different but simultaneous tests. Earthquake engineering cannot give answers by testing and qualifying few, small typical components or single large prototypes. Besides, the large diversity of Civil Engineering structures does not allow drawing conclusions from only a few tests; structures are large and their seismic response and performance cannot be meaningfully tested in an ordinary lab or in the field. So, seismic testing facilities should be much larger than in other scientific fields; their staff has to be resourceful, devising intelligent ways to carry out simultaneously different tests and advanced computations. To better serve such a mission European testing facilities and researchers in earthquake engineering have shared their resources and activities in the framework of the European project SERIES, combining their research and jointly developing advanced testing and instrumentation techniques that maximize testing capabilities and increase the value of the tests. This volume presents the first outcomes of the SERIES and its contribution towards Performance-based Earthquake Engineering, i.e., to the most important development in Earthquake Engineering of the past three decades. The concept and the methodologies for performance-based earthquake engineering have now matured. However, they are based mainly on analytical/numerical research; large-scale seismic testing has entered the stage recently. The SERIES Workshop in Ohrid (MK) in Sept. 2010 pooled together the largest European seismic testing facilities, Europe's best experts in experimental earthquake engineering and select experts from the USA, to present recent research achievements and to address future developments. Audience: This volume will be of interest to researchers and advanced practitioners in structural earthquake engineering, geotechnical earthquake engineering, engineering seismology, and experimental dynamics, including seismic qualification.

RECENT ADVANCES IN EARTHQUAKE ENGINEERING

SELECT PROCEEDINGS OF VCDRR 2021

[Springer Nature](#)

INCREASE 2019

PROCEEDINGS OF THE 2ND INTERNATIONAL CONGRESS ON ENGINEERING AND SUSTAINABILITY IN THE XXI CENTURY

[Springer Nature](#) This book contains the proceedings of the International Congress on Engineering and Sustainability in the XXI Century - INCREaSE 2019, which was held in Faro, Portugal, from October 09 to 11, 2019. The book promotes a multidisciplinary approach to sustainable development, exploring a number of transversal challenges. Among other topics it discusses Climate Changes and Environmental Protection; Renewable Energy; Energy Efficiency in Buildings; Green Governance and Mobility; Water for Ecosystem and Society; Healthy Food; Sustainable Construction; and Sustainable Tourism, offering perspectives from civil, electronics, mechanical, and food engineering.

ADVANCED EARTHQUAKE ENGINEERING ANALYSIS

[Springer Science & Business Media](#) During the last decade, the state-of-the-art in Earthquake Engineering Design and Analysis has made significant steps towards a more rational analysis of structures. This book reviews the fundamentals of displacement based methods. Starting from engineering seismology and earthquake geotechnical engineering, it proceeds to focus on design, analysis and testing of structures with emphasis on buildings and bridges.

ADVANCES IN PERFORMANCE-BASED EARTHQUAKE ENGINEERING

[Springer Science & Business Media](#) Performance-based Earthquake Engineering has emerged before the turn of the century as the most important development in the field of Earthquake Engineering during the last three decades. It has since then started penetrating codes and standards on seismic assessment and retrofitting and making headway towards seismic design standards for new structures as well. The US have been a leader in Performance-based Earthquake Engineering, but also Europe is a major contributor. Two Workshops on Performance-based Earthquake Engineering, held in Bled (Slovenia) in 1997 and 2004 are considered as milestones. The ACES Workshop in Corfu (Greece) of July 2009 builds on them, attracting as contributors world-leaders in Performance-based Earthquake Engineering from North America, Europe and the Pacific rim (Japan, New Zealand, Taiwan, China). It covers the entire scope of Performance-based Earthquake Engineering: Ground motions for performance-based earthquake engineering; Methodologies for Performance-based seismic design and retrofitting; Implementation of Performance-based seismic design and retrofitting; and Advanced seismic testing for performance-based earthquake engineering. Audience: This volume will be of interest to scientists and advanced practitioners in structural earthquake engineering, geotechnical earthquake engineering, engineering seismology, and experimental dynamics.

REDUCING THE SEISMIC VULNERABILITY OF EXISTING BUILDINGS ASSESSMENT AND RETROFIT

[MDPI](#) This book is a printed edition of the Special Issue Reducing the Seismic Vulnerability of Existing Buildings: Assessment and Retrofit that was published in Buildings

PROCEEDINGS OF THE 4TH INTERNATIONAL CONFERENCE ON PERFORMANCE BASED DESIGN IN EARTHQUAKE GEOTECHNICAL ENGINEERING (BEIJING 2022)

[Springer Nature](#) The 4th International Conference on Performance-based Design in Earthquake Geotechnical Engineering (PBD-IV) is held in Beijing, China. The PBD-IV Conference is organized under the auspices of the International Society of Soil Mechanics and Geotechnical Engineering - Technical Committee TC203 on Earthquake Geotechnical Engineering and Associated Problems (ISSMGE-TC203). The PBD-I, PBD-II, and PBD-III events in Japan (2009), Italy (2012), and Canada (2017) respectively, were highly successful events for the international earthquake geotechnical engineering community. The PBD events have been excellent companions to the International Conference on Earthquake Geotechnical Engineering (ICEGE) series that TC203 has held in Japan (1995), Portugal (1999), USA (2004), Greece (2007), Chile (2011), New Zealand (2015), and Italy (2019). The goal of PBD-IV is to provide an open forum for delegates to interact with their international colleagues and advance performance-based design research and practices for earthquake geotechnical engineering.

ADVANCES IN SEISMIC PERFORMANCE AND RISK ESTIMATION OF PRECAST CONCRETE BUILDINGS

[Frontiers Media SA](#)

SHIP-SHAPED OFFSHORE INSTALLATIONS

DESIGN, CONSTRUCTION, OPERATION, HEALTHCARE AND DECOMMISSIONING

[Cambridge University Press](#) Understand the safe engineering of ship-shaped offshore installations with this fully updated second edition.

EARTHQUAKE HAZARD AND SEISMIC RISK REDUCTION

[Springer Science & Business Media](#) In 1998 Armenia was commemorating the tenth anniversary of the catastrophic Spitak earthquake. The Second International Conference on "Earthquake Hazard and Seismic Risk Reduction" sponsored by the Government of the Republic of Armenia and United Nation's International Decade for Natural Disaster Reduction (UN/IDNDR) was held in dedication to that event between 14-21 September (later referred to as Yerevan Conference). The Yerevan Conference has been organized by the National Survey for Seismic Protection (NSSP) of the Republic of Armenia. All level's decision-makers (from the ministers to the local authorities), politicians, scientists, leaders of the executive and legislative powers, psychologists, leading businessmen, representatives from the private sector and the media as well as from the International Organizations have been invited by the Armenian NSSP to take part in joint discussion of the Seismic Risk Reduction Problem for the first time in the history of such forums. Armenian NSSP's such initiative has been triggered by the experience of the Spitak earthquake and other disasters. They showed that it will be possible to reduce the risks, posed by the natural disaster, only through the common efforts of all the community in co-operation with the International institutions.

SEISMIC BEHAVIOUR AND DESIGN OF IRREGULAR AND COMPLEX CIVIL STRUCTURES IV

[Springer Nature](#) This volume contains papers of the 9th European Workshop on the Seismic Behaviour of Irregular and Complex Structures (9EWICS) held in Lisbon, Portugal, in 2020. This workshop, organized at Instituto Superior Técnico, University of Lisbon, continued the successful three-annual series of workshops started back in 1996. Its organization had the sponsorship of Working Group 8 (Seismic Behaviour of Irregular and Complex Structures) of the European Association of Earthquake Engineering. This international event provided a platform for discussion and exchange of ideas and unveiled new insights on the possibilities and challenges of irregular and complex structures under seismic actions. The topics addressed include criteria for regularity, seismic design of irregular structures, seismic assessment of irregular and complex structures, retrofit of irregular and complex structures, and soil-structure interaction for irregular and complex structures. Beyond an excellent number of interesting papers on these topics, this volume includes the papers of

the two invited lectures-one devoted to irregularities in RC buildings, including perspectives in current seismic design codes, difficulties in their application and further research needs, and another one dedicated to the challenging and very up to date topic in the area of seismic response of masonry building aggregates in historical centers. This volume includes 26 contributions from authors of 11 countries, giving a complete and international view of the problem. The holds particular interest for all the community involved in the challenging task of seismic design, assessment and/or retrofit of irregular and complex structures.

ROLE OF SEISMIC TESTING FACILITIES IN PERFORMANCE-BASED EARTHQUAKE ENGINEERING

SERIES WORKSHOP

Springer Nowadays research in earthquake engineering is mainly experimental and in large-scale; advanced computations are integrated with large-scale experiments, to complement them and extend their scope, even by coupling two different but simultaneous tests. Earthquake engineering cannot give answers by testing and qualifying few, small typical components or single large prototypes. Besides, the large diversity of Civil Engineering structures does not allow drawing conclusions from only a few tests; structures are large and their seismic response and performance cannot be meaningfully tested in an ordinary lab or in the field. So, seismic testing facilities should be much larger than in other scientific fields; their staff has to be resourceful, devising intelligent ways to carry out simultaneously different tests and advanced computations. To better serve such a mission European testing facilities and researchers in earthquake engineering have shared their resources and activities in the framework of the European project SERIES, combining their research and jointly developing advanced testing and instrumentation techniques that maximize testing capabilities and increase the value of the tests. This volume presents the first outcomes of the SERIES and its contribution towards Performance-based Earthquake Engineering, i.e., to the most important development in Earthquake Engineering of the past three decades. The concept and the methodologies for performance-based earthquake engineering have now matured. However, they are based mainly on analytical/numerical research; large-scale seismic testing has entered the stage recently. The SERIES Workshop in Ohrid (MK) in Sept. 2010 pooled together the largest European seismic testing facilities, Europe's best experts in experimental earthquake engineering and select experts from the USA, to present recent research achievements and to address future developments. Audience: This volume will be of interest to researchers and advanced practitioners in structural earthquake engineering, geotechnical earthquake engineering, engineering seismology, and experimental dynamics, including seismic qualification.

SEISMIC DESIGN METHODS FOR STEEL BUILDING STRUCTURES

Springer Nature

SNOW ENGINEERING: RECENT ADVANCES

PROCEEDINGS OF THE THIRD INTERNATIONAL CONFERENCE, SENDAI, JAPAN, 26-31 MAY 1996

CRC Press The objective of the conference was to provide a forum for engineers, architects and scientists to discuss a broad range of research and design methods for various problems related to snow engineering. Specialists in building and civil engineering, environmental engineering, energy engineering, urban planning, and regional development as well as snow scientists were brought together for the conference. The technical sessions were in five thematic areas as follows: Snow technology and science; Building and construction engineering; Infrastructure and transportation; Housing and residential planning; Development strategy in snow countries. The 115 papers provide keys to realize more comfortable living conditions in snow countries and to overcome many problems in heavy snow regions.

GEOTECHNICS FOR NATURAL AND ENGINEERED SUSTAINABLE TECHNOLOGIES

GEONEST

Springer This contributed volume encompasses contributions by eminent researchers in the field of geotechnical engineering. The chapters of this book are based on the keynote and sub-theme lectures delivered at the Indian Geotechnical Conference 2017. The book provides a comprehensive overview of the current state-of-the-art research and practices in different domains of geotechnical engineering in the areas of soil dynamics, earth retaining structures, ground improvement, and geotechnical and geophysical investigations. It will serve as an ideal resource for academics, researchers, practicing professionals, and students alike.

PROCEEDINGS OF THE ELEVENTH EUROPEAN CONFERENCE ON EARTHQUAKE ENGINEERING

6-11 SEPTEMBER 1998, PARIS, FRANCE

EUROPEAN SEISMIC DESIGN PRACTICE - RESEARCH AND APPLICATION

PROCEEDINGS OF THE 5TH SECED CONFERENCE, CHESTER, UK, 26-27 OCTOBER 1995

Routledge It is evident that European earthquake engineering research and design practice is assuming a role of increasing importance on the international scene. This is primarily due to two considerations; firstly the emergence of a core of European earthquake engineers who are co-operating on a long-term basis for the development of seismic design criteria specific to the European environment and secondly the identification of new problems in existing design practice in the USA and in Japan. It is in this context that European earthquake engineering activities and publications are eagerly observed and awaited by the international community. Includes a compact set of papers from leading research institutions, laboratories and companies in Europe, with a healthy number of contributions from elsewhere. It represents the European state-of-the-art and practice in earthquake testing, analysis & design of civil engineering works as well as strong-motion & hazard studies.

DYNAMIC BEHAVIOR OF CONCRETE AND SEISMIC ENGINEERING

John Wiley & Sons While the static behavior of concrete has been the subject of numerous works, the same cannot be said for the dynamic behavior. This book sets out to remedy this situation: it begins by presenting the most frequently used experimental techniques in the study of the dynamic behavior of concrete, then continues by examining seismicity and seismic behavior, soil behavior, models of concrete structures subject to seismic activity, seismic calculation methods of structures, and paraseismic engineering.

RESILIENT STRUCTURES AND INFRASTRUCTURE

Springer This book discusses resilience in terms of structures' and infrastructures' responses to extreme loading conditions. These include static and dynamic loads such as those generated by blasts, terrorist attacks, seismic events, impact loadings, progressive collapse, floods and wind. In the last decade, the concept of resilience and resilient-based structures has increasingly gained in interest among engineers and scientists. Resilience describes a given structure's ability to withstand sudden shocks. In other words, it can be measured by the magnitude of shock that a system can tolerate. This book offers a valuable resource for the development of new engineering practices, codes and regulations, public policy, and investigation reports on resilience, and provides broad and integrated coverage of the effects of dynamic loadings, and of the modeling techniques used to compute the structural response to these loadings.

EARTHQUAKE ENGINEERING HANDBOOK

CRC Press Earthquakes are nearly unique among natural phenomena - they affect virtually everything within a region, from massive buildings and bridges, down to the furnishings within a home. Successful earthquake engineering therefore requires a broad background in subjects, ranging from the geologic causes and effects of earthquakes to understanding the imp

EARTHQUAKE GEOTECHNICS

SELECT PROCEEDINGS OF 7TH ICRAGEE 2021

Springer Nature This volume presents select papers presented at the 7th International Conference on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics. The papers discuss advances in the fields of soil dynamics and geotechnical earthquake engineering. Some of the themes include ground response analysis & local site effect, seismic slope stability & landslides, application of AI in geotechnical earthquake engineering, etc. A strong emphasis is placed on connecting academic research and field practice, with many examples, case studies, best practices, and discussions on performance based design. This volume will be of interest to researchers and practicing engineers alike.

EARTHQUAKE RESISTANT BUILDINGS

DYNAMIC ANALYSES, NUMERICAL COMPUTATIONS, CODIFIED METHODS, CASE STUDIES AND EXAMPLES

Springer Science & Business Media This concise work provides a general introduction to the design of buildings which must be resistant to the effect of earthquakes. A major part of this design involves the building structure which has a primary role in preventing serious damage or structural collapse. Much of the material presented in this book examines building structures. Due to the recent discovery of vertical components, it examines not only the resistance to lateral forces but also analyses the disastrous influence of vertical components. The work is written for Practicing Civil, Structural, and Mechanical Engineers, Seismologists and Geoscientists. It serves as a knowledge source for graduate students and their instructors.

EARTHQUAKE GEOTECHNICAL ENGINEERING DESIGN

Springer Science & Business Media Pseudo-static analysis is still the most-used method to assess the stability of geotechnical systems that are exposed to earthquake forces. However, this method does not provide any information about the deformations and permanent displacements induced by seismic activity. Moreover, it is questionable to use this approach when geotechnical systems are affected by frequent and rare seismic events. Incidentally, the peak ground acceleration has increased from 0.2-0.3 g in the seventies to the current value of 0.6-0.8 g. Therefore, a shift from the pseudo-static approach to performance-based analysis is needed. Over the past five years considerable progress has been made in Earthquake Geotechnical Engineering Design (EGED). The most recent advances are presented in this book in 6 parts. The evaluation of the site amplification is covered in Part I of the book. In Part II the evaluation of the soil foundation stability against natural slope failure and liquefaction is treated. In the following 3 Parts of the book the EGED for different geotechnical systems is presented as follows: the design of levees and dams including natural slopes in Part III; the design of foundations and soil structure interaction analysis in Part IV; underground structures in Part V. Finally in Part VI, new topics like the design of reinforced earth retaining walls and landfills are covered.

SEISMOLOGY AND EARTHQUAKE ENGINEERING RESEARCH INFRASTRUCTURE ALLIANCE FOR EUROPE

FINAL REPORT

The Seismology and Earthquake Engineering Research Infrastructure Alliance for Europe (SERA) aims to reduce the risk posed by natural and anthropogenic earthquakes based on innovative research and development projects.

WHY DO BUILDINGS COLLAPSE IN EARTHQUAKES?

BUILDING FOR SAFETY IN SEISMIC AREAS

John Wiley & Sons Learn from the personal experience and insights of leading earthquake engineering specialists as they examine the lessons from disasters of the last 30 years and propose a path to earthquake safety worldwide Why Do Buildings Collapse in Earthquakes?: Building for Safety in Seismic Areas delivers an insightful and comprehensive analysis of the key lessons taught by building failures during earthquakes around the world. The book uses empirical evidence to describe the successes of earthquake engineering and disaster preparedness, as well as the failures that may have had tragic consequences. Readers will learn what makes buildings in earthquake zones vulnerable, what can be done to design, build and maintain those buildings to reduce or eliminate that vulnerability, and what can be done to protect building occupants. Those who are responsible for the lives and safety of building occupants and visitors - architects, designers, engineers, and building owners or managers - will learn how to provide adequate safety in earthquake zones. The text offers useful and accessible answers to anyone interested in natural disasters generally and those who have specific concerns about the impact of earthquakes on the built environment. Readers will benefit from the inclusion of: A thorough introduction to how buildings have behaved in earthquakes, including a description of the world's most lethal earthquakes and the fatality trend over time An exploration of how buildings are constructed around the world, including considerations of the impact of climate and seismicity on home design A discussion of what happens during an earthquake, including the types and levels of ground motion, landslides, tsunamis, and sequential effects, and how different types of buildings tend to behave in response to those phenomena What different stakeholders can do to improve the earthquake safety of their buildings The owners and managers of buildings in earthquake zones and those responsible for the safety of people who occupy or visit them will find Why Do Buildings Collapse in Earthquakes? Building for Safety in Seismic Areas essential reading, as will all architects, designers and engineers who design or refurbish buildings in earthquake zones.

RECENT ADVANCES IN BOUNDARY ELEMENT METHODS

A VOLUME TO HONOR PROFESSOR DIMITRI BESKOS

Springer Science & Business Media This volume, dedicated to Professor Dimitri Beskos, contains contributions from leading researchers in Europe, the USA, Japan and elsewhere, and addresses the needs of the computational mechanics research community in terms of timely information on boundary integral equation-based methods and techniques applied to a variety of fields. The contributors are well-known scientists, who also happen to be friends, collaborators as past students of Dimitri Beskos. Dimitri is one the BEM pioneers who started his career at the University of Minnesota in Minneapolis, USA, in the 1970s and is now with the University of Patras in Patras, Greece. The book is essentially a collection of both original and review articles on contemporary Boundary Element Methods (BEM) as well as on the newer Mesh Reduction Methods (MRM), covering a variety of research topics. Close to forty contributions compose an over-500 page volume that is rich in detail and wide in terms of breadth of coverage of the subject of integral equation formulations and solutions in both solid and fluid mechanics.