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This book comprises select proceedings of the annual conference of the Indian Geotechnical Society. The conference brings together research and case histories on various aspects of geotechnical and geoenvironmental engineering. The book presents papers on geotechnical applications and case histories, covering topics such as (i) Characterization of Geomaterials and Physical Modelling; (ii) Foundations and Deep Excavations; (iii) Soil Stabilization and Ground Improvement; (iv) Geoenvironmental Engineering and Waste Material Utilization; (v) Soil Dynamics and Earthquake Geotechnical Engineering; (vi) Earth Retaining Structures, Dams and Embankments; (vii) Slope Stability and Landslides; (viii) Transportation Geotechnics; (ix) Geosynthetics Applications; (x) Computational, Analytical and Numerical Modelling; (xi) Rock Engineering, Tunnelling and Underground Constructions; (xii) Forensic Geotechnical Engineering and Case Studies; and (xiii) Others Topics: Behaviour of Unsaturated Soils, Offshore and Marine Geotechnics, Remote Sensing and GIS, Field Investigations, Instrumentation and Monitoring, Retrofitting of Geotechnical Structures, Reliability in Geotechnical Engineering, Geotechnical Education, Codes and Standards, and other relevant topics. The contents of this book are of interest to researchers and practicing engineers alike.

Steel-concrete composite structures are widely used throughout the world for buildings and bridges. A distinguishing feature of this form of construction is the combination of concrete and steel components to achieve enhanced structural performance. The time-dependent response of concrete and its influence on the service behaviour and design of composite structures are the main focus of this SED. For the first time, a publication combines a state-of-the-art review of the research with the available design specifications of Europe, Australia and New Zealand, and USA. This publication intends to enhance the awareness of the service response of composite structures and of the latest research and standards' developments. It is aimed at designers and researchers alike. The review of research available in open literature is provided and arranged according to structural typologies, i. e. slabs, beams, and columns. It serves as background information for current service design rules and provides insight into the most recent research advancements. The review of available design guidelines presents the similarities and differences of the recommended service design procedures influenced by concrete time effects.

Selected case studies of building and bridge projects show possible design approaches and the rationale required when dealing with the time-dependent response and design of composite structures. The authors of this publication are design engineers and academics involved in the service design and research on the time-dependent response of composite structures.

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 seismic design of deep & shallow foundations, soil structure interaction under dynamic loading, marine structures, 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.

This book contains diverse topics relevant to earthquake engineering and technology. The chapters are of interest to readers from various disciplines, as the different chapters discuss popular topics on earthquake engineering and allied disciplines. The chapters have adequate illustrations and tables for clarifying underlying concepts. The reader can understand the fundamental concepts easily, and the book is highly useful for practice in the field in addition to classroom learning.

Special Structural Topics

Proceedings of the Indian Geotechnical Conference 2019

Seismic Behaviour and Design of Irregular and Complex Civil Structures IV

Minimum Design Loads for Buildings and Other Structures

Seismic Loads: Time-Saving Methods Using the 2018 IBC and ASCE/SEI 7-16

From Tall Buildings to Urban Areas

Innovative Bridge Design Handbook: Construction, Rehabilitation, and Maintenance, Second Edition, brings together the essentials of bridge engineering across design, assessment, research and construction. Written by an international group of experts, each chapter is divided into two parts: the first covers design issues, while the second presents current research into the innovative design approaches used across the world. This new edition includes new topics such as foot bridges, new materials in bridge engineering and soil-foundation structure interaction. All chapters have been updated to include the latest concepts in design, construction, and maintenance to reduce project cost, increase structural safety, and maximize durability. Code and standard references have been updated. Completely revised and updated with the latest in bridge engineering and design Provides detailed design procedures for specific bridges with solved examples Presents structural analysis including numerical methods (FEM), dynamics, risk and reliability, and innovative structural typologies

Your timely source for more cost-effective and less disruptive solutions to your underground infrastructure needs. The North American Tunneling Conference is the premier biennial tunneling event for North America, bringing together the brightest, most resourceful, and innovative minds in the tunneling industry. It underscores the important role that the industry plans in the development of underground spaces, transportation and conveyance systems, and other forms of sustainable underground infrastructure. With every conference, the number of attendees and breadth of topics grows. The authors-expert and leaders in the industry-share the latest case histories, expertise, lessons learned, and real-world applications from around the globe. Crafted from a collection of 92 papers presented at the conference, this book takes you deep inside the projects. It includes sections on technology, planning, design, and case histories.

Minimum Design Loads and Associated Criteria for Buildings .. Minimum Design Loads for Buildings and Other StructuresAmer Society of Civil Engineers

This report describes a recommended methodology for reliably quantifying building system performance and response parameters for use in seismic design. The recommended methodology (referred to herein as the Methodology) provides a rational basis for establishing global seismic performance factors (SPFs), including the response modification coefficient (R factor), the system overstrength factor, and deflection amplification factor (Cd), of new seismic-force-resisting systems proposed for inclusion in model building codes. The purpose of this Methodology is to provide a rational basis for determining building seismic performance factors that, when properly implemented in the seismic design process, will result in equivalent safety against collapse in an earthquake, comparable to the inherent safety against collapse intended by current seismic codes, for buildings with different seismic-force-resisting systems.

Principles of Structural Design

Minimum Design Loads and Associated Criteria for Buildings ...

Design of Reinforced Concrete Buildings for Seismic Performance

Innovative Bridge Design Handbook

Safer, Stronger, Smarter

Construction, Rehabilitation and Maintenance

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 T é cnico, 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.

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 and 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.

Authors Coulbourne and Stafford provide a comprehensive overview of the wind load provisions in Minimum Design Loads and Associated Criteria for Buildings and Other Structures, ASCE/SEI 7-16, focusing on the provisions that affect the planning, design, and construction of buildings for residential and commercial purposes.

Provides structural engineers with the knowledge and practical tools needed to perform structural designs for wind that incorporate major technological, conceptual, analytical and computational advances achieved in the last two decades. With clear explanations and documentation of the concepts, methods, algorithms, and software available for accounting for wind loads in structural design, it also describes the wind engineer's contributions in sufficient detail that they can be effectively scrutinized by the structural engineer in charge of the design. Wind Effects on Structures: Modern Structural Design for Wind, 4th Edition is organized in four sections. The first covers atmospheric flows, extreme wind speeds, and bluff body aerodynamics. The second examines the design of buildings, and includes chapters on aerodynamic loads; dynamic and effective wind-induced loads; wind effects with specified MRIs; low-rise buildings; tall buildings; and more. The third part is devoted to aeroelastic effects, and covers both fundamentals and applications. The last part considers other structures and special topics such as trussed frameworks; offshore structures; and tornado effects. Offering readers the knowledge and practical tools needed to develop structural designs for wind loadings, this book: Points out significant limitations in the design of buildings based on such techniques as the high-frequency force balance Discusses powerful algorithms, tools, and software needed for the effective design for wind, and provides numerous examples of application Discusses techniques applicable to structures other than buildings, including stacks and suspended-span bridges Features several appendices on Elements of Probability and Statistics; Peaks-over-Threshold Poisson-Process Procedure for Estimating Peaks; estimates of the WTC Towers' Response to Wind and their shortcomings; and more Wind Effects on Structures: Modern Structural Design for Wind, 4th Edition is an excellent text for structural engineers, wind engineers, and structural engineering students and faculty.

Energy-Based Seismic Engineering

Wind Effects on Structures

Fundamentals of Structural Mechanics, Dynamics, and Stability

Local Site Effects and Ground Failures

Proceedings of the 6th GeoChina International Conference on Civil & Transportation Infrastructures: From Engineering to Smart & Green Life Cycle Solutions -- Nanchang, China, 2021

Guide to the Wind Load Provisions of Asce 7-16

Publisher's Note: Products purchased from Third Party sellers are not guaranteed by the publisher for quality, authenticity, or access to any online entitlements included with the product. Concise, visual explanations of code provisions that apply to seismic loads This practical guide provides engineers with a visual overview of the code provisions pertinent to seismic loads. Seismic Loads: Time-Saving Methods Using the 2018 IBC and ASCE/SEI 7-16 contains simplified, step-by-step procedures that can be applied to determine seismic design criteria and requirements. Included are design aids, figures, flowcharts, and examples that clearly demonstrate each procedure. Companion online Excel spreadsheets can be used in practice to calculate loads accurately and efficiently. Contains step-by-step procedures for: Seismic ground motion values Site-specific ground motion Seismic design category Seismic design for building structures Equivalent lateral force procedure Vertical and horizontal distribution of seismic forces Story drift determination P-delta effects Diaphragms, chords, and collectors Seismic forces on walls and their anchorage Determining seismic forces using a simplified method Seismic design for nonstructural components Seismic forces on nonbuilding structures

Concise, visual explanations of code provisions that apply to wind loads This practical guide provides engineers with a visual overview of the code provisions pertinent to wind loads. Free of complicated and confusing explanations, the book includes numerous design aids, figures, and flowcharts that clearly demonstrate the code provisions. Written by a recognized expert in the field, Wind Loads: Time-Saving Methods Using the 2018 IBC and ASCE/SEI 7-16 contains simplified, step-by-step procedures that can be applied to main wind force resisting systems and components and cladding of building and nonbuilding structures. Examples and companion online Excel spreadsheets can be used to accurately and efficiently calculate wind loads. Coverage includes wind load requirements for: Wind velocity pressure Gust effects on rigid and flexible buildings and other structures Main wind force resisting systems of buildings and other structures Components and cladding of buildings and other structures Enclosed, partially enclosed, partially open, and open buildings of all heights Low-rise buildings Roof overhangs and parapets Building appurtenances and other structures Solid freestanding walls and signs Chimneys, tanks, open signs, single-plane open frames, and trussed towers Rooftop structures and equipment Circular bins, silos, and tanks Rooftop solar panels

This book focuses on how to maintain environmental sustainability as one of its main principles, and it addresses how smart cities serve to diminish wastes and maintain natural resources by having clean green energy that is operated by new smart technology designs. Living in a smart city is not something of the future anymore, it is here, and it is being implemented all over the world. A smart city uses different types of electronic Internet of things (IoT) sensors to collect data and then use these data to manage assets and resources efficiently. The smart city concept integrates information and communication technology (ICT), and various physical devices connected to the IoT network to optimize the efficiency of city operations and services and achieve sustainable solutions to allow us to grow with proper management of our resources. Smart sustainable structures and infrastructures face the need of urban areas due to the growth of populations while in the same time save our environment. To achieve this, we need to revisit the conventional methods in design and construction and the conventional materials which are used now to optimize the design and provide smart solutions. In the past few years, the consumption of resources has been massive, and the waste produced from that consumption has been inconceivable. This is causing environmental degradation, which produces many environmental challenges, such as global climate change, excessive fossil fuel dependency and the growing demand for energy. As well as, discussing the challenges facing the civil engineering design and construction of smart cities components and presenting concepts and insight from experts and researchers from different civil engineering disciplines., this book explains how to construct buildings and special structures and how to manage and monitor energy.

With increasing urbanization and development of society, advancement in geotechnical technologies is essential to the construction of infrastructures. Geotechnical Investigation is the first step of applying scientific methods and engineering principles to obtain solutions to civil engineering problems. The studies presented in this volume deal with the attempts made by scholars and engineers to address the latest development in geotechnical engineering such as characterization of geomaterials, slope stability, tunneling, mitigation of geohazards, and some other geotechnical issues that are quite relevant in today's world. This volume is based on contributions to the the GeoChina International Conference on Civil & Transportation Infrastructures: From Engineering to Smart & Green Life Cycle Solutions -- Nanchang, China, 2021.

Wood, Steel, and Concrete, Third Edition

International Handbook of Structural Fire Engineering

Advancements in Geotechnical Engineering

Toward Sustainable Community

Proceedings of IWEBSE 2021

A Guide to Improving School Natural Hazard Safety

Safety, Reliability, Risk and Life-Cycle Performance of Structures and Infrastructures contains the plenary lectures and papers presented at the 11th International Conference on STRUCTURAL SAFETY AND RELIABILITY (ICOSSAR2013, New York, NY, USA, 16-20 June 2013), and covers major aspects of safety, reliability, risk and life-cycle performance of str

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.

This book contains the proceedings of the 12th KES International Conference on Sustainability and Energy in Buildings 2020 (SEB20) held in Split, Croatia, during 24–26 June 2020 organized by KES International. SEB20 invited contributions on a range of topics related to sustainable buildings and explored innovative themes regarding sustainable energy systems. The aim of the conference is to bring together researchers, and government and industry professionals to discuss the future of energy in buildings, neighbourhoods and cities from a theoretical, practical, implementation and simulation perspective. The conference formed an exciting chance to present, interact and learn about the latest research and practical developments on the subject. The conference attracted submissions from around the world. Submissions for the Full-Paper Track were subjected to a blind peer-review process. Only the best of these were selected for presentation at the conference and publication in these proceedings. It is intended that this book provides a useful and informative snapshot of recent research developments in the important and vibrant area of sustainability in energy and buildings.

Third Printing, incorporating errata, Supplement 1, and expanded commentary, 2013.

Guide to the Seismic Load Provisions of ASCE 7-10

IGC-2019 Volume IV

Seismic Design Methods for Steel Building Structures

Quantification of Building Seismic Performance Factors

Structural Load Determination: 2018 and 2021 IBC and ASCE/SEI 7-16

Fundamentals of Structural Mechanics, Dynamics, and Stability examines structural mechanics from a foundational point of view and allows students to use logical inference and creative reasoning to solve problems versus rote memorization. It presents underlying theory and emphasizes the relevant mathematical concepts as related to structural mechanics in each chapter. Problems, examples, and case studies are provided throughout, as well as simulations to help further illustrate the content. Features: Presents the material from general theory and fundamentals through to practical applications. Explains the finite element method for elastic bodies, trusses, frames, non-linear behavior of materials, and more. Includes numerous practical worked examples and case studies throughout each chapter. Fundamentals of Structural Mechanics, Dynamics, and Stability serves as a useful text for students and instructors as well as practicing engineers.

Publisher's Note: Products purchased from Third Party sellers are not guaranteed by the publisher for quality, authenticity, or access to any online entitlements included with the product. A fully updated source for structural steel design information Thoroughly revised for the latest advances, this comprehensive resource contains information essential to the design of steel structures. The book lays out the fundamentals of structural steel fabrication and erection followed by detailed design methods for steel beams, columns, tension

components, roof systems, and connections. Design examples throughout the book clearly demonstrate how to apply complex code provisions in the field. You will get clear explanations of AISC 360-16, the AASHTO Standard Specification for Structural Steel Bridges, the AISI Cold-Formed Steel Standards, ASCE 7-16, and the 2018 IBC. Structural Steel Designer's Handbook, Sixth Edition, covers: • Properties of structural steels • Effects of steelmaking and fabrication • Fabrication and erection • Connections • Building codes, loads, and fire protection • Criteria for building design • Design of building members • Floor and roof systems • Lateral-force design • Cold-formed steel design • Highway bridge design criteria • Beam, girder, and truss bridges • Arch and cable-suspended bridges

Readers learn to master the basic principles of structural analysis using the classical approach found in Kassimali's distinctive STRUCTURAL ANALYSIS, 6th Edition. This edition presents structural analysis concepts in a logical order, progressing from an introduction of each topic to an analysis of statically determinate beams, trusses and rigid frames, and then to the analysis of statically indeterminate structures. Practical, solved problems integrated throughout each presentation help illustrate and clarify the book's fundamental concepts, while the latest examples and timely content reflect today's most current professional standards. Kassimali's STRUCTURAL ANALYSIS, 6th Edition provides the foundation needed for advanced study and professional success. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

This volume contains the papers presented at IALCCE2018, the Sixth International Symposium on Life-Cycle Civil Engineering (IALCCE2018), held in Ghent, Belgium, October 28-31, 2018. It consists of a book of extended abstracts and a USB device with full papers including the Fazlur R. Khan lecture, 8 keynote lectures, and 390 technical papers from all over the world. Contributions relate to design, inspection, assessment, maintenance or optimization in the framework of life-cycle analysis of civil engineering structures and infrastructure systems. Life-cycle aspects that are developed and discussed range from structural safety and durability to sustainability, serviceability, robustness and resilience. Applications relate to buildings, bridges and viaducts, highways and runways, tunnels and underground structures, off-shore and marine structures, dams and hydraulic structures, prefabricated design, infrastructure systems, etc. During the IALCCE2018 conference a particular focus is put on the cross-fertilization between different sub-areas of expertise and the development of an overall vision for life-cycle analysis in civil engineering. The aim of the editors is to provide a valuable source of cutting edge information for anyone interested in life-cycle analysis and assessment in civil engineering, including researchers, practising engineers, consultants, contractors, decision makers and representatives from local authorities.

Decision-making in an Uncertain World

Safety, Reliability, Risk and Life-Cycle Performance of Structures and Infrastructures

Natural Hazards Engineering Research Infrastructure (NHERI) 2016-2020: Mitigating the Impact of Natural Hazards on Civil Infrastructure and Communities

Structural Steel Designer's Handbook, Sixth Edition

Seismic Loads

Practical Deterministic and Probabilistic Approaches

Special Structural Topics covers specialty structural situations for students and professional architects and engineers, such as soil mechanics, structural retrofit, structural integrity, cladding design, blast considerations, vibration, and structural sustainability. As part of the Architect's Guidebooks to Structures series, it provides a comprehensive overview using both imperial and metric units of measurement with more than 150 images. As a compact summary of key ideas, it is ideal for anyone needing a quick guide to specialty structural considerations.

The volume explains how risk and decision-making analytics can be applied to the wicked problem of protecting infrastructure and society from extreme events. There is increasing research that takes into account the risks associated with the timing and severity of extreme events in engineering to reduce the vulnerability or increase the resiliency of infrastructure.

"Engineering for extremes" is defined as measures taken to reduce the vulnerability or increase the resiliency of built infrastructure to climate change, hurricanes, storms, floods, earthquakes, heat waves, fires, and malevolent and abnormal events that include terrorism, gas explosions, vehicle impact and vehicle overload. The book introduces the key concepts needed to assess the economic and social well-being risks, costs and benefits of infrastructure to extreme events. This includes hazard modelling (likelihood and severity), infrastructure vulnerability, resilience or exposure (likelihood and extent of damage), social and economic loss models, risk reduction from protective measures, and decision theory (cost-benefit and utility analyses). Case studies authored by experts from around the world describe the practical aspects of risk assessment when deciding on the most cost-efficient measures to reduce infrastructure vulnerability to extreme events for housing, buildings, bridges, roads, tunnels, pipelines, and electricity infrastructure in the developed and developing worlds.

Finley Charney provides clear, authoritative explanations of the seismic design provisions contained in Minimum Design Loads for Buildings and Other Structures, Standard ASCE/SEI 7-10.

To best serve current and future generations, infrastructure needs to be resilient to the changing world while using limited resources in a sustainable manner. Research on and funding towards sustainability and resilience are growing rapidly, and significant research is being carried out at a number of institutions and centers worldwide. This handbook brings together current research on sustainable and resilient infrastructure and, in particular, stresses the fundamental nexus between sustainability and resilience. It aims to coalesce work from a large and diverse group of contributors across a wide range of disciplines including engineering, technology and informatics, urban planning, public policy, economics, and finance. Not only does it present a theoretical formulation of sustainability and resilience but it also demonstrates how these ideals can be realized in practice. This work will provide a reference text to students and scholars of a number of disciplines.

NEHRP Recommended Provisions (National Earthquake Hazards Reduction Program) for Seismic Regulations for New Buildings and Other Structures: Commentary

Asce 7-98

Sustainability in Energy and Buildings 2020

Wind Loads: Time Saving Methods Using the 2018 IBC and ASCE/SEI 7-16

Routledge Handbook of Sustainable and Resilient Infrastructure

Proceedings of the Sixth International Symposium on Life-Cycle Civil Engineering (IALCCE 2018), 28-31 October 2018, Ghent, Belgium

The costs of inadequate earthquake engineering are huge, especially for reinforced concrete buildings. This book presents the principles of earthquake-resistant structural engineering, and uses the latest tools and techniques to give practical design guidance to address single or multiple seismic performance levels. It presents an elegant, simple and theoretically coherent design framework.

Required strength is determined on the basis of an estimated yield displacement and desired limits of system ductility and drift demands. A simple deterministic approach is presented along with its elaboration into a probabilistic treatment that allows for design to limit annual probabilities of failure. The design method allows the seismic force resisting system to be designed on the basis of elastic analysis results, while nonlinear analysis is used for performance verification. Detailing requirements of ACI 318 and Eurocode 8 are presented. Students will benefit from the coverage of seismology, structural dynamics, reinforced concrete, and capacity design approaches, which allows the book to be used as a foundation text in earthquake engineering.

Timber, steel, and concrete are common engineering materials used in structural design. Material choice depends upon the type of structure, availability of material, and the preference of the designer. The design practices the code requirements of each material are very different. In this updated edition, the elemental designs of individual components of each material are presented, together with theory of structures essential for the design. Numerous examples of complete structural designs have been included. A comprehensive database comprising materials properties, section properties, specifications, and design aids, has been included to make this essential reading.

This Handbook is focused on structural resilience in the event of fire. It serves as a single point of reference for practicing structural and fire protection engineers on the topic of structural fire safety. It is also stands as a key point of reference for university students engaged with structural fire engineering.

Calculate structural loads in compliance with the 2018 IBC® and ASCE/SEI 7-16This practical guide shows, step by step, how to interpret and apply the load provisions contained in the 2018 IBC® and ASCE/SEI 7-16. You will learn how to accurately determine structural loads including dead loads, live loads, and environmental loads. Throughout the book, detailed design examples, unique flowcharts, and design aids illustrate the proper usage of the code within the scope of everyday practice. Coverage includes:-Structural load fundamentals-IBC® and ASCE 7 explanations-Load combinations-Dead, live, rain, and soil lateral loads-Snow and ice loads-Wind loads-Earthquake loads-Flood and tsunami loads-Load paths

Modern Structural Design for Wind

INTERNATIONAL BUILDING CODE

Seismic Design and Performance

Life Cycle Analysis and Assessment in Civil Engineering: Towards an Integrated Vision

Wind Loads

North American Tunneling 2022 Proceedings

The first edition of this monograph, presenting accurate and efficient simulations of seismic damage to buildings and cities, has received significant attention from the research community. To keep abreast of the rapid development in recent years, our latest breakthrough achievements have been added to this new edition, including novel resilient structural components, secondary disaster simulations, emergency responses and resilient recovery of communities after earthquake. This edition comprehensively covers a range of numerical modeling approaches, higher performance computation methods, and high fidelity visualization techniques for earthquake disaster simulation of tall buildings and urban areas. It also demonstrates successful engineering applications of the proposed methodologies to typical landmark projects (e.g., Shanghai Tower and CITIC Tower, two of the world's tallest buildings; Beijing CBD and San Francisco Bay Area). Reported in this edition are a collection of about 60 high impact journal publications which have already received high citations.

Design and Construction of Smart Cities

Time-dependent Behaviour and Design of Composite Steel-concrete Structures

Theory and Practice in Earthquake Engineering and Technology

Structural Analysis

Engineering for Extremes

Select Proceedings of 7th ICORAGEE 2020