

current codes and design manuals; and to give authoritative review

Computational Modelling of Concrete and Concrete Structures Springer Nature

This book presents the select proceedings of the International Conference on Advances in Construction Materials and Management (ACMM 2021). It discusses the recent innovations towards construction management, building technology and new materials in practice in civil engineering. Various topics covered include architecture and urban planning, smart materials and structures, GIS in construction application, transportation materials and engineering, geotechnical applications in construction, energy and sustainability, green building technologies and materials and construction management. The book will be useful for beginners, researchers and professionals working in the area of civil engineering.

Finite-Element Modelling of Structural Concrete IOS Press

Insights and Innovations in Structural Engineering, Mechanics and Computation comprises 360 papers that were presented at the Sixth International Conference on Structural Engineering, Mechanics and Computation (SEMC 2016, Cape Town, South Africa, 5-7 September 2016). The papers reflect the broad scope of the SEMC conferences, and cover a wide range of engineering structures (buildings, bridges, towers, roofs, foundations, offshore structures, tunnels, dams, vessels, vehicles and machinery) and engineering materials (steel, aluminium, concrete, masonry, timber, glass, polymers, composites, laminates, smart materials). Some contributions present the latest insights and new understanding on (i) the mechanics of structures and systems (dynamics, vibration, seismic response, instability, buckling, soil-structure interaction), and (ii) the mechanics of materials and fluids (elasticity, plasticity, fluid-structure interaction, flow through porous media, biomechanics, fracture, fatigue, bond, creep, shrinkage). Other contributions report on (iii) recent advances in computational modelling and testing (numerical simulations, finite-element modeling, experimental testing), and (iv) developments and innovations in structural engineering (planning, analysis, design, construction, assembly, maintenance, repair and retrofitting of structures). Insights and Innovations in Structural Engineering, Mechanics and Computation is particularly of interest to civil, structural, mechanical, marine and aerospace engineers. Researchers, developers, practitioners and academics in these disciplines will find the content useful. Short versions of the papers, intended to be concise but self-contained summaries of the full papers, are collected in the book, while the full versions of the papers are on the accompanying CD.

Leveraging Artificial Intelligence in Engineering, Management, and Safety of Infrastructure CRC Press

A Powerful Tool for the Analysis and Design of Complex Structures Finite-Element Modelling of Structural Concrete: Short-Term Static and Dynamic Loading Conditions presents a finite-element model of structural concrete under short-term loading, covering the whole range of short-term loading conditions, from static (monotonic and cyclic) to

Structural Design for Fire Safety Springer Nature

This volume highlights the latest advances, innovations, and applications in the field of fibre reinforced concrete (FRC) and discusses a diverse range of topics concerning FRC: rheology and early-age properties, mechanical properties, codes and standards, long-term properties, durability, analytical and numerical models, quality control, structural and industrial applications, smart FRC's, nanotechnologies related to FRC, textile reinforced concrete, structural design and UHPFRC. The contributions present improved traditional and new ideas that will open novel research directions and foster multidisciplinary collaboration between different specialists. Although the symposium was postponed, the book gathers peer-reviewed papers selected in 2020 for the RILEM-fib International Symposium on Fibre Reinforced Concrete (BEFIB).

Environmental and Construction Engineering: Reality and the Future MDPI

This book comprises select and peer-reviewed proceedings of the International Conference on Recent Trends in Construction Materials and Structures (ICON 2019). The contents cover various latest developments and emerging technologies in sustainable construction materials, utilization of waste materials in concrete, special concrete, maintenance of heritage structures, earthquake engineering, and structural dynamics. The book also provides effective and feasible solutions to current problems in sustainable construction materials and structures. This book is useful for students, researchers, and industry professionals interested in concrete technology and structures.

Computational Modelling of Concrete Structures Springer Nature

The first textbook on the design of FRP for structural engineering applications Composites for Construction is a one-of-a-kind guide to understanding fiber-reinforced polymers (FRP) and designing and retrofitting structures with FRP. Written and organized like traditional textbooks on steel, concrete, and wood design, it demystifies FRP composites and demonstrates how both new and retrofit construction projects can especially benefit from these materials, such as offshore and waterfront structures, bridges, parking garages, cooling towers, and industrial buildings. The code-based design guidelines featured in this book allow for demonstrated applications to immediately be implemented in the real world. Covered codes and design guidelines include ACI 440, ASCE Structural Plastics Design Manual, EUROCOMP Design Code, AASHTO Specifications, and manufacturer-published design guides. Procedures are provided to the structural designer on how to use this combination of code-like documents to design with FRP profiles. In four convenient sections, Composites for Construction covers: * An introduction to FRP applications, products and properties, and to the methods of obtaining the characteristic properties of FRP materials for use in structural design * The design of concrete structural members reinforced with FRP reinforcing bars * Design of FRP strengthening systems such as strips, sheets, and fabrics for upgrading the strength and ductility of reinforced concrete structural members * The design of trusses and frames made entirely of FRP structural profiles produced by the pultrusion process

Infrastructure Systems for Nuclear Energy Elsevier

Non Destructive Testing and Non Destructive Evaluation using Ultrasounds covers an important field of applications and requires a wide range of fundamental theoretical, numerical and experimental investigations. In the present volume, the reader will find some relevant research results on wave propagation in complex materials and structures which are concerned with today's problems on composites, bonding, guided waves, contact or damage, imaging and structural noise. The fifth meeting of the Anglo-French Research Group on "Wave propagation in non homogeneous media with a view to Non Destructive testing" was held in Anglet, France, June 2-6, 2008.

Recent Advances in Structural Engineering Frontiers Media SA

Advances in Urban Engineering and Management Science contains the selected papers resulting from the 2022 3rd International Conference on Urban Engineering and Management Science (ICUEMS 2022). Covering a wide range of topics, the Proceedings of ICUEMS 2022 presents the latest developments in: (i) Architecture and Urban Planning (Architectural design and its theory, Urban planning and design, Building technology science, Urban protection and regeneration, Urban

development strategy, Ecological construction and intelligent control, Sustainable infrastructure); (ii) Logistics and supply chain management (Warehousing and distribution, Logistics outsourcing, Logistics automation, Production and material flow, Supply chain management technology, Supply chain risk management, Global service supply chain management, Supply Chain Planning and Inventory Management, Coordination and collaboration of supply chain networks, Governance and regulatory aspects affecting supply chain management); (iii) Urban traffic management (Smart grid management, Belt and Road Development, Intelligent traffic analysis and planning management, Big data and transportation management). The Proceedings of ICUEMS 2022 will be useful to professionals, academics, and Ph.D. students interested in the above-mentioned fields. Emphasis was put on basic methodologies, scientific development and engineering applications. ICUEMS 2022 is to provide a platform for experts, scholars, engineers and technical researchers engaged in the related fields of urban engineering management to share scientific research achievements and cutting-edge technologies, understand academic development trends, broaden research ideas, strengthen academic research and discussion, and promote the industrialization cooperation of academic achievements. Experts, scholars, business people and other relevant personnel from universities and research institutions at home and abroad are cordially invited to attend and exchange.

Extended Finite Element Method Springer Nature

Tubular Structures XV contains the latest scientific and engineering developments in the field of tubular structures, as presented at the 15th International Symposium on Tubular Structures (ISTS15, Rio de Janeiro, Brazil, 27-29 May 2015). The International Symposium on Tubular Structures (ISTS) has a long-standing reputation for being the principal

Mechanics of Fiber and Textile Reinforced Cement Composites CRC Press

This book presents selected, peer-reviewed proceedings of the 3rd International Conference on Material, Machines and Methods for Sustainable Development (MMMS2022), held in the city of Can Tho, Vietnam, from 10 to 13 November 2022. The purpose of the conference is to explore and ensure an understanding of the critical aspects contributing to sustainable development with a focus on advanced mechanical engineering, automation, materials, machines and methods. The contributions published in this book come from authors representing universities, research institutes and industrial companies and reflect the results of a very broad spectrum of research, from micro- and nanoscale materials design and processing, to mechanical engineering technology in industry. Many of the contributions selected for these proceedings focus on materials modeling, eco-material processes and mechanical manufacturing. Volume 1 of this book focuses on topics dedicated to advanced materials and manufacturing technologies, ranging from synthesis of new materials to sustainable development manufacturing technology.

ICSECM 2019 Springer Nature

Behaviour of Steel Structures in Seismic Areas comprises the latest progress in both theoretical and experimental research on the behaviour of steel structures in seismic areas. The book presents the most recent trends in the field of steel structures in seismic areas, with particular reference to the utilisation of multi-level performance bas

Smart & Sustainable Infrastructure: Building a Greener Tomorrow Springer

Dynamics of Civil Structures, Volume 2. Proceedings of the 34th IMAC, A Conference and Exposition on Dynamics of Multiphysical Systems: From Active Materials to Vibroacoustics, 2016, the second volume of ten from the Conference brings together contributions to this important area of research and engineering. The collection presents early findings and case studies on fundamental and applied aspects of Structural Dynamics, including papers on: • Modal Parameter Identification • Dynamic Testing of Civil Structures • Human Induced Vibrations of Civil Structures • Model Updating • Operational Modal Analysis • Damage Detection • Bridge Dynamics • Experimental Techniques for Civil Structures • Hybrid testing • Vibration Control of Civil Structures

Advances in Construction Materials and Structures Springer Nature

Computational Modelling of Concrete and Concrete Structures contains the contributions to the EURO-C 2022 conference (Vienna, Austria, 23-26 May 2022). The papers review and discuss research advancements and assess the applicability and robustness of methods and models for the analysis and design of concrete, fibre-reinforced and prestressed concrete structures, as well as masonry structures. Recent developments include methods of machine learning, novel discretisation methods, probabilistic models, and consideration of a growing number of micro-structural aspects in multi-scale and multi-physics settings. In addition, trends towards the material scale with new fibres and 3D printable concretes, and life-cycle oriented models for ageing and durability of existing and new concrete infrastructure are clearly visible. Overall computational robustness of numerical predictions and mathematical rigour have further increased, accompanied by careful model validation based on respective experimental programmes. The book will serve as an important reference for both academics and professionals, stimulating new research directions in the field of computational modelling of concrete and its application to the analysis of concrete structures. EURO-C 2022 is the eighth edition of the EURO-C conference series after Innsbruck 1994, Bad Gastein 1998, St. Johann im Pongau 2003, Mayrhofen 2006, Schladming 2010, St. Anton am Arlberg 2014, and Bad Hofgastein 2018. The overarching focus of the conferences is on computational methods and numerical models for the analysis of concrete and concrete structures.

Proceedings of the 3rd Annual International Conference on Material, Machines and Methods for Sustainable Development (MMMS2022) Springer Nature

The 16th ICSMGE responds to the needs of the engineering and construction community, promoting dialog and exchange between academia and practice in various aspects of soil mechanics and geotechnical engineering. This is reflected in the central theme of the conference 'Geotechnology in Harmony with the Global Environment'. The proceedings of the conference are of great interest for geo-engineers and researchers in soil mechanics and geotechnical engineering. Volume 1 contains 5 plenary session lectures, the Terzaghi Oration, Heritage Lecture, and 3 papers presented in the major project session. Volumes 2, 3, and 4 contain papers with the following topics: Soil mechanics in general; Infrastructure and mobility; Environmental issues of geotechnical engineering; Enhancing natural disaster reduction systems; Professional practice and education. Volume 5 contains the report of practitioner/academic forum, 20 general reports, a summary of the sessions and workshops held during the conference.

Tubular Structures XV CRC Press

The EURO-C conference series (Split 1984, Zell am See 1990, Innsbruck 1994, Badgastein 1998, St Johann im Pongau 2003, Mayrhofen 2006, Schladming 2010, St Anton am Alberg 2014) brings together researchers and practising engineers concerned with theoretical, algorithmic and validation aspects associated with computational simulations of concrete and