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The 5th International Conference on Civil Engineering and Urban Planning (CEUP2016) was held in Xi'an, China on August 23 - 26, 2016. CEUP2016 gathered outstanding scientists and researchers worldwide to exchange and discuss new findings in civil engineering and urban planning associated with transportation and environmental topics. The conference program committee is also greatly honored to have four renowned experts for taking time off to present their keynotes to the conference. The conference had received a total of 410 submissions, which after peer review by the Technical Program Committee, only 108 were selected to be included in this conference proceedings, which covers Architecture and Urban Planning; Civil Engineering and Transportation Engineering.

"TRB's National Cooperative Highway Research Program (NCHRP) Report 647: Recommended Design Specifications for Live Load Distribution to Buried Structures explores recommendations to revise the American Association of State Highway and Transportation Officials Load and Resistance Factor Design Bridge Design Specifications relating to the distribution of live load to buried structures"--Publisher's description.

Volume is indexed by Thomson Reuters CPCI-S (WoS). The main objective of this collection of 39 authoritative articles is to share the latest information on cutting-edge technologies in the field of safety and structural integrity.

Risks and uncertainties?market, financial, operational, social, humanitarian, environmental, and institutional?are the inherent realities of the modern world. Stock market crashes, demonetization of currency, and climate change constitute just a few examples that can adversely impact financial institutions across the globe. To mitigate these risks and avoid a financial crisis, a better under-

standing of how the economy responds to uncertainties is needed. Maintaining Financial Stability in Times of Risk and Uncertainty is an essential reference source that discusses how risks and uncertainties affect the financial stability and security of individuals and institutions, as well as probable solutions to mitigate risk and achieve financial resilience under uncertainty. Featuring research on topics such as financial fraud, insurance ombudsman, and Knightian uncertainty, this book is developed for researchers, academicians, policymakers, students, and scholars.

This book, for the first time, introduces comprehensively all main topics of lifeline earthquake engineering, including the structure analysis, network evaluation, and network design. The distinctive features involved in this book are the construction of theories and methods for stochastic analysis of structures based the physical idea, probability analytical algorithms for network evaluation by employing Boolean Algebra, functional evaluation of water distribution networks using hydraulic analysis, and network design methods by employing genetic, simulated annealing, and hybrid algorithms.

In this fully up-to-date volume, important new developments and applications of discrete element modelling are highlighted and brought together for presentation at the First International UDEC/3DEC Symposium. Papers covered the following key areas: * behaviour of masonry structures (walls, bridges, towers, columns) * stability and deformation of tunnels and caverns in fractured rock masses * geomechanical modelling for mining and waste repositories * rock reinforcement design (anchors, shotcrete, bolts) * mechanical and hydro-mechanical behaviour of dams and foundations * rock slope stability, deformation and failure mechanisms * modelling of fundamental rock mechanical problems * modelling of geological processes * constitutive laws for fractured rock masses and masonry structures * dynamic behaviour of discrete struc-

tures. Numerical Modelling of Discrete Materials in Geotechnical Engineering, Civil Engineering, and Earth Sciences provides an ultra-modern, in-depth analysis of discrete element modelling in a range of different fields, thus proving valuable reading for civil, mining, and geotechnical engineers, as well as other interested professionals.

This book is a printed edition of the Special Issue "Mechanical Behavior of High-Strength Low-Alloy Steels" that was published in Metals

In the past decades advances have been made in the research and practice on unsaturated soil mechanics. In 2000 the first Asia-Pacific Conferences on Unsaturated Soils was organized in Singapore. Since then, four conferences have been held under the continued support of the Technical Committee on Unsaturated Soils (TC106) of the International Socie

A comprehensive and detailed reference guide on the integrity and safety of oil and gas pipelines, both onshore and offshore Covers a wide variety of topics, including design, pipe manufacture, pipeline welding, human factors, residual stresses, mechanical damage, fracture and corrosion, protection, inspection and monitoring, pipeline cleaning, direct assessment, repair, risk management, and abandonment Links modern and vintage practices to help integrity engineers better understand their system and apply up-to-date technology to older infrastructure Includes case histories with examples of solutions to complex problems related to pipeline integrity Includes chapters on stress-based and strain-based design, the latter being a novel type of design that has only recently been investigated by designer firms and regulators Provides information to help those who are responsible to establish procedures for ensuring pipeline integrity and safety

The material in this work is focused on recent developments in re-

search into the stress-strain behavior of geomaterials, with an emphasis on laboratory measurements, soil constitutive modeling and behavior of soil structures (such as reinforced soils, piles and slopes). The latest advancements in the field, such as the rate effect and dynamic behavior of both clay and sand, behavior of modified soils and soil mixtures, and soil liquefaction are addressed.

This book provides information on the latest technological developments taking place in Geotechnical engineering, pertaining to Soil Dynamics and Modelling of Geotechnical Problems. The book is useful for the academicians and working professionals with coverage of both theoretical and practical aspects of Dynamics of Soil and Modelling studies on Geotechnical problems based on research findings and site specific inputs. The book serves as a useful reference resource for graduate and postgraduate students of civil engineering and contents of the book are helpful to the postgraduate students and research scholars in carrying out the research.

Extended Abstracts of Research Papers Published in 5IYGEC: The 5th Indian Young Geotechnical Engineers Conference, organized by Indian Geotechnical Society to commemorate Silver Jubilee of IGS, Baroda Chapter.

Buried pipes are a highly efficient method of transport. In fact, only open channels are less costly to construct. However, the structural mechanics of buried pipes can be complicated, and imprecisions in the properties of the soil envelope are usually too great to justify lengthy, complicated analyses. Designers and engineers need principles and m

This book presents state-of-the-art methodologies for the design and analysis of buried steel pipelines subjected to severe ground-induced action, including tectonic (quasi-static) effects, slope movements (landslides), liquefaction-induced actions or excavation-induced settlements. The text is an amended version of the final deliverables of the GIPIPE project, sponsored by the European Commission (Research Fund for Coal and Steel programme, 2011-2014). Geohazards and Pipelines presents an integrated investigation of this subject, using advanced and innovative experimental techniques, high-performance numerical simulations and novel analytical methodologies, which account for the particularities of buried steel pipelines with an emphasis on soil-pipeline interaction. Geohazards and Pipelines will be of use to professionals

working in the field of pipeline engineering, including design consultants and industrial practitioners involved in projects related to pipeline infrastructure. Structural engineers, mechanical engineers, geotechnical engineers, geologists and seismologists may also find this book of interest, as may graduate students and researchers in these areas.

This classic reference has built a reputation as the "go to" book to solve even the most vexing pipeline problems. Now in its seventh edition, Pipeline Rules of Thumb Handbook continues to set the standard by which all others are judged. The 7th edition features over 30% new and updated sections, reflecting the exponential changes in the codes, construction and equipment since the sixth edition. The seventh edition includes: recommended drill sizes for self-tapping screws, new ASTM standard reinforcing bars, calculations for calculating grounding resistance, national Electrical Code tables, Corilis meters, pump seals, progressive cavity pumps and accumulators for lubricating systems. * Shortcuts for pipeline construction, design, and engineering * Calculations methods and handy formulas * Turnkey solutions to the most vexing pipeline problems

This book presents selected papers from the International Symposium on Geotechnics for Transportation Infrastructure (ISGTI 2018). The research papers cover geotechnical interventions for the diverse fields of policy formulation, design, implementation, operation and management of the different modes of travel, namely road, air, rail and waterways. This book will be of interest to academic and industry researchers working in transportation geotechnics, as also to practicing engineers, policy makers, and civil agencies.

This book contains the full papers on which the invited lectures of the 4th International Conference on Geotechnical Earthquake Engineering (4ICEGE) were based. The conference was held in Thessaloniki, Greece, from 25 to 28 June, 2007. The papers offer a comprehensive overview of the progress achieved in soil dynamics and geotechnical earthquake engineering, examine ongoing and unresolved issues, and discuss ideas for the future.

This book gathers selected contributions in the field of civil and structural engineering, as presented by international researchers and engineers at the International Conference on Materials Physics, Building Structures and Technologies in Construction, Industrial and Production Engineering (MPCPE), held in Vladimir,

Russia on April 26-28 2021. The book covers a wide range of topics including the theory and design of capital construction facilities, engineering and hydraulic structures; development of innovative solutions in the field of modeling and testing of reinforced concrete, metal and wooden structures, as well as composite structures based on them; investigation of complex dynamic effects on construction objects, and many others directions. Intended for professional builders, designers and researchers. The contributions, which were selected by means of a rigorous international peer-review process, highlight numerous exciting ideas that will spur novel research directions and foster multidisciplinary collaborations.

MOP 119 offers sound information on the structural design and analysis of buried steel pipe consistent with the latest pipe/soil design concepts of the industry.

Structural Mechanics and Design of Metal Pipes: A systematic approach for onshore and offshore pipelines presents a unified and systematic approach to understanding and analyzing the structural behavior of onshore and offshore metallic pipelines. Following an overview of pipeline engineering and pipe fabrication, the mechanics of elastic rings and cylinders is presented as a prelude to structural performance of metal pipes under various loading conditions, which involve pressure and structural loads. The book also discusses special topics, such as geohazards and strain-based design, large-diameter water pipelines, global buckling and mechanically-lined pipes, and outlines approaches for developing state-of-the-art finite element models. In all topics addressed in this book, the mechanical behavior of pipes is related with specific design methods for onshore and offshore pipelines. Reflects the author's 30-year experience in structural mechanics of pipes and tubulars Describes the structural performance of onshore and offshore pipelines Addresses key features of pipe mechanics to both practicing engineers and researchers Covers a wide spectrum of pipe behavior from the pipe mill to service conditions Presents the background of structural design provisions in major pipeline standards

This volume contains contributions by eminent researchers in the field of geotechnical engineering. The chapters of this book are based on the keynote and theme lectures delivered at the Indian Geotechnical Conference 2018, and discuss the recent issues and challenges, while providing perspective on the possible solutions and future directions. A strong emphasis is placed on proving con-

nections between academic research and field practice, with many examples and case studies. Topics covered in this volume include contemporary infrastructural challenges, underground space utilization, sustainable construction, dealing with problematic soils and situations and geo-environmental issues including landfills. This book will be of interest to researchers, practitioners and students alike.

New technologies, such as improved testing and physical modeling methods, together with numerical studies and other novel techniques, have led to many developments in the fields of hydraulic and civil engineering in recent years. This book presents proceedings from HCET 2021, the 6th International Technical Conference on Frontiers of Hydraulic and Civil Engineering Technology, held in Sanya, China, on 28 and 29 August 2021. The conference highlighted the latest advances, innovations and applications in the fields of hydraulic and civil engineering, and served as a platform to promote and celebrate interdisciplinary study. The book contains 89 papers, selected from 178 contributions and divided into 4 sections: Modern Civil Engineering; Water and Hydraulic Engineering; Environment Engineering and Sciences; and Transdisciplinary Engineering and Technology. Topics covered involve both theoretical and practical knowledge and understanding, primarily in the areas of hydraulics and water resource engineering, civil engineering, environmental engineering and sciences, transportation engineering, coastal and ocean engineering and transdisciplinary engineering and technology. The book, which presents a wealth of exciting ideas that will open novel research directions and foster multidisciplinary collaboration among specialists in various fields, will be of interest to all academics, researchers, practitioners and policymakers seeking to understand and tackle civil and hydraulic engineering challenges by adopting appropriate, sustainable, solutions.

Containing papers from the Special Technical Session on Earthquake Geotechnical Engineering, this volume includes coverage of: zonation maps; liquefaction; side effects; ground motions; slope instability; seismic behaviour of slopes; dikes and dams; and warning systems.

Marine pipelines for the transportation of oil and gas have become a safe and reliable part of the expanding infrastructure put in place for the development of the valuable resources below the world's seas and oceans. The design of these pipelines is a rela-

tively new technology and continues to evolve as the design of more cost effective pipelines becomes a priority and applications move into deeper waters and more hostile environments. This updated edition of a best selling title provides the reader with a scope and depth of detail related to the design of offshore pipelines and risers not seen before in a textbook format. With over 25 years experience, Professor Yong Bai has been able to assimilate the essence of the applied mechanics aspects of offshore pipeline system design in a form of value to students and designers alike. It represents an excellent source of up to date practices and knowledge to help equip those who wish to be part of the exciting future of this industry.

Unearth the Secrets of Designing and Building High-Quality Buried Piping Systems This brand-new edition of Buried Pipe Design helps you analyze the performance of a wide range of pipes, so you can determine the proper pipe and installation system for the job. Covering almost every type of rigid and flexible pipe, this unique reference identifies and describes factors involved in working with sewer and drain lines, water and gas mains, subway tunnels, culverts, oil and coals slurry lines, and telephone and electrical conduits. It provides clear examples for designing new municipal drinking and wastewater systems or rehabilitating existing ones that will last for many years on end. Comprehensive in scope and meticulously detailed in content, this is the pipe design book you'll want for a reference. This NEW edition includes: Important data on the newest pipe styles, including profile-wall polyethylene Updated references to ASTM, AWWA, and ASHTTO, standards Numerous examples of specific types of pipe system designs Safety precautions included in installation specifications Greater elaboration on trenchless technology methods New information on the cyclic life of PVC pressure pipe Buried Pipe Design covers the ins and outs of: External Loads Gravity Flow Pipe Design Pressure Pipe Design Rigid Pipe Products Flexible Steel Pipe Flexible Ductile Iron Pipe Flexible Plastic Pipe Pipe Installation Trenchless Technology

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 PB-

D-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.

This book is a part of ICL new book series "ICL Contribution to Landslide Disaster Risk Reduction" founded in 2019. Peer-reviewed papers submitted to the Fifth World Landslide Forum were published in six volumes of this book series. This book contains the following parts: • Impact of Large Ground Deformations near Seismic Faults on Critically Important Civil Infrastructures • Recent Progress in the Landslide Initiating Science • Earth Observation and Machine Learning in Landslide Science • General Landslide Studies Professor Željko Arbanas is the Vice President of International Consortium on Landslides. He is a Professor of Faculty of Civil Engineering, University of Rijeka, Croatia. He is the Assistant Editor-in-Chief of International Journal Landslides. Professor Peter Bobrowsky is the President of International Consortium on Landslides. He is a Senior Scientist of Geological Survey of Canada, Ottawa, Canada. Professor Kazuo Konagai is Professor Emeritus at the University of Tokyo and Principal Researcher at the ICL Headquarters. He serves as the Secretary-General of the Fifth World Landslide Forum. Professor Kyoji Sassa is the Founding President and the Secretary-General of the International Consortium on Landslides (ICL). He has been the Editor-in-Chief of International Journal Landslides since its foundation in 2004. Professor Kaoru Takara is the Executive Director of International Consortium on Landslides. He is a Professor and Dean of Graduate School of Advanced Integrated Studies (GSAIS) in Human Survivability (Shishu-Kan), Kyoto University.

Explains why pipeline stress corrosion cracking happens and how it can be prevented Pipelines sit at the heart of the global economy. When they are in good working order, they deliver fuel to meet the ever-growing demand for energy around the world. When they fail due to stress corrosion cracking, they can wreak

environmental havoc. This book skillfully explains the fundamental science and engineering of pipeline stress corrosion cracking based on the latest research findings and actual case histories. The author explains how and why pipelines fall prey to stress corrosion cracking and then offers tested and proven strategies for preventing, detecting, and monitoring it in order to prevent pipeline failure. *Stress Corrosion Cracking of Pipelines* begins with a brief introduction and then explores general principals of stress corrosion cracking, including two detailed case studies of pipeline failure. Next, the author covers: Near-neutral pH stress corrosion cracking of pipelines High pH stress corrosion cracking of pipelines Stress corrosion cracking of pipelines in acidic soil environments Stress corrosion cracking at pipeline welds Stress corrosion cracking of high-strength pipeline steels The final chapter is dedicated to effective management and mitigation of pipeline stress corrosion cracking. Throughout the book, the author develops a number of theoretical models and concepts based on advanced

microscopic electrochemical measurements to help readers better understand the occurrence of stress corrosion cracking. By examining all aspects of pipeline stress corrosion cracking—the causes, mechanisms, and management strategies—this book enables engineers to construct better pipelines and then maintain and monitor them to ensure safe, reliable energy supplies for the world.

An up-to-date and practical reference book on piping engineering and stress analysis, this book emphasizes three main concepts: using engineering common sense to foresee a potential piping stress problem, performing the stress analysis to confirm the problem, and lastly, optimizing the design to solve the problem. Systematically, the book proceeds from basic piping flexibility analyses, springer hanger selections, and expansion joint applications, to vibration stress evaluations and general dynamic analyses. Emphasis is placed on the interface with connecting equipment such as vessels, tanks, heaters, turbines, pumps and compressors. Chapters dealing with discontinuity stresses, special

thermal problems and cross-country pipelines are also included. The book is ideal for piping engineers, piping designers, plant engineers, and mechanical engineers working in the power, petroleum refining, chemical, food processing, and pharmaceutical industries. It will also serve as a reference for engineers working in building and transportation services. It can be used as an advance text for graduate students in these fields.

This is the third book in a series on Computational Methods in Earthquake Engineering. The purpose of this volume is to bring together the scientific communities of Computational Mechanics and Structural Dynamics, offering a wide coverage of timely issues on contemporary Earthquake Engineering. This volume will facilitate the exchange of ideas in topics of mutual interest and can serve as a platform for establishing links between research groups with complementary activities. The computational aspects are emphasized in order to address difficult engineering problems of great social and economic importance.