
Effects Of Near Fault Ground Motions On Frame Structures

Proceedings of the Third PRC-US Workshop on Seismic Analysis and Design of Special Bridges

Fema 350

Bridge Maintenance, Safety, Management, Life-Cycle Sustainability and Innovations

Earthquake Spectra

Proceedings of the 7th International Conference on Earthquake Geotechnical Engineering, (ICEGE 2019), June 17-20, 2019, Rome, Italy

Proceedings of the 4th International Specialty Conference, Naples, Italy, 9-12 June 2003

Why Chi-Chi was a Relatively Mild M7.6 Earthquake

Critical Earthquake Response of Elastic-Plastic Structures Under Near-Fault or Long-Duration Ground Motions: Closed-Form Approach via Impulse Input

Recent Advancements in Civil Engineering

Seismic Design Recommendations

Proceedings of the International Conference ICCAE, Taipei, Taiwan, November 4-6, 2016

Select Proceedings of ACE 2020

Paleoseismic Investigation at Rock Canyon, Provo Segment, Wasatch Fault Zone, Utah County, Utah

Held at State Key Laboratory for Disaster Reduction in Civil Engineering, Tongji University, October 21-22, 2004

Proceedings of IWEBSE 2021

Earthquake Geotechnical Engineering for Protection and Development of Environment and Constructions

Select Proceedings of 7th ICORAGEE 2020

Earthquake-Induced Landslides

Effects of Fault Dip and Slip Rake on Near-source Ground Motion

Civil, Architecture and Environmental Engineering

Proceedings of the NATO SFP Workshop on Future Directions in Instrumentation for Strong Motion and Engineering Seismology,

Kusadasi, Izmir, May 17-21, 2004

Scenario for a Magnitude 7.0 Earthquake on the Hayward Fault
Energy-Based Seismic Engineering
Tentative Provisions for the Development of Seismic Regulations for Buildings
Maintenance, Safety, Risk, Management and Life-Cycle Performance of Bridges
2nd fib Congress in Naples Italy Vol1
Proceedings of the Ninth International Conference on Bridge Maintenance, Safety and Management (IABMAS 2018), 9-13 July 2018, Melbourne, Australia
Parallel Simulation of Structural Performance in Earthquakes
The Professional Journal of the Earthquake Engineering Research Institute
Critical Earthquake Response of Elastic-Plastic Structures Under Near-Fault Ground Motions: Closed-Form Approach Via Impulse Input
Seismic Design and Performance
Geotechnical Engineering For Disaster Mitigation And Rehabilitation 2011 - Proceedings Of The 3rd Int'l Conf Combined With The 5th Int'l Conf On Geotechnical And Highway Engineering - Practical Applications, Challenges And Opportunities (With Cd-rom)
Perspectives on Earthquake Science
Best Practices in Physics-based Fault Rupture Models for Seismic Hazard Assessment of Nuclear Installations
Seismological Research Letters
Seismic Design of Reinforced Concrete and Masonry Buildings
Technical Report

*Effects Of Near Fault
Ground Motions On
Frame Structures*

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DIAZ LACI

**Proceedings of the Third PRC-US
Workshop on Seismic Analysis and
Design of Special Bridges** Springer
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.
Fema 350 Birkhäuser
This two-volume work contains the papers

presented at the 2016 International Conference on Civil, Architecture and Environmental Engineering (ICCAE 2016) that was held on 4-6 November 2016 in Taipei, Taiwan. The meeting was organized by China University of Technology and Taiwan Society of Construction Engineers and brought together professors, researchers, scholars and industrial pioneers from all over the world. ICCAE 2016 is an important forum for the presentation of new research developments, exchange of ideas and experience and covers the following subject areas: Structural Science & Architecture Engineering, Building Materials & Materials Science, Construction Equipment & Mechanical Science, Environmental Science & Environmental Engineering, Computer Simulation & Computer and Electrical Engineering.

Bridge Maintenance, Safety, Management, Life-Cycle Sustainability and Innovations
Wiley-Interscience

This report, FEMA-350 – Recommended Seismic Design Criteria for New Steel Moment-Frame Buildings has been developed by the SAC Joint Venture under

contract to the Federal Emergency Management Agency (FEMA) to provide organizations engaged in the development of consensus design standards and building code provisions with recommended criteria for the design and construction of new buildings incorporating moment-resisting steel frame construction to resist the effects of earthquakes. It is one of a series of companion publications addressing the issue of the seismic performance of steel moment-frame buildings. The set of companion publications includes: FEMA-350 – Recommended Seismic Design Criteria for New Steel Moment-Frame Buildings. This publication provides recommended criteria, supplemental to FEMA-302 – 1997 NEHRP Recommended Provisions for Seismic Regulations for New Buildings and Other Structures, for the design and construction of steel moment-frame buildings and provides alternative performance-based design criteria. FEMA-351 – Recommended Seismic Evaluation and Upgrade Criteria for Existing Welded Steel Moment-Frame Buildings. This publication provides recommended methods to evaluate the

probable performance of existing steel moment-frame buildings in future earthquakes and to retrofit these buildings for improved performance. FEMA-352 – Recommended Postearthquake Evaluation and Repair Criteria for Welded Steel Moment-Frame Buildings. This publication provides recommendations for performing postearthquake inspections to detect damage in steel moment-frame buildings following an earthquake, evaluating the damaged buildings to determine their safety in the postearthquake environment, and repairing damaged buildings. FEMA-353 – Recommended Specifications and Quality Assurance Guidelines for Steel Moment-Frame Construction for Seismic Applications. This publication provides recommended specifications for the fabrication and erection of steel moment frames for seismic applications. The recommended design criteria contained in the other companion documents are based on the material and workmanship standards contained in this document, which also includes discussion of the basis for the quality control and quality assurance criteria contained in the recommended specifications. The

information contained in these recommended design criteria, hereinafter referred to as Recommended Criteria, is presented in the form of specific design and performance evaluation procedures together with supporting commentary explaining part of the basis for these recommendations.

Earthquake Spectra CRC Press
Advances and Trends in Structural Engineering, Mechanics and Computation features over 300 papers classified into 21 sections, which were presented at the Fourth International Conference on Structural Engineering, Mechanics and Computation (SEMC 2010, Cape Town, South Africa, 6-8 September 2010). The SEMC conferences have been held every 3 years in

Proceedings of the 7th International Conference on Earthquake Geotechnical Engineering, (ICEGE 2019), June 17-20, 2019, Rome, Italy Createspace
Independent Publishing Platform
Presents a compelling portrayal of a magnitude 7.0 earthquake on the Hayward fault in the San Francisco Bay Area. All aspects of such an earthquake are covered, from the social & economic

setting of the San Francisco Bay Area, through the geologic, seismologic, & earthquake engineering issues raised by such a severe earthquake in a heavily urbanized region. Also covers the emergency response & recovery aspects that would challenge the capabilities of Bay Area neighborhoods, organizations, & governments. Photos, maps & tables.
Proceedings of the 4th International Specialty Conference, Naples, Italy, 9-12 June 2003 Utah Geological Survey
Field work for this paleoseismic investigation at Rock Canyon was performed in 1988. It was one of three studies conducted in the late 1980s and early 1990s to determine if the Provo segment of the Wasatch fault zone should be subdivided into three smaller segments as tentatively proposed by Machette and others on the basis of their geologic mapping. This investigation was the last of the three studies performed. Those results, combined with the results of paleoseismic investigations at American Fork Canyon and Mapleton, showed that the Wasatch fault where it passes through Utah Valley probably consists of a single, almost 70-kilometer-long fault segment

(Machette and others, 1992). Publication of the details of the Rock Canyon study has been delayed for several years, chiefly due to the press of new job duties on the part of the investigators. The information remains important and is presented here for the use of those individuals interested in earthquake hazards and seismic-source characteristics of the Wasatch fault in Utah Valley. 21 pages + 2 plates

Why Chi-Chi was a Relatively Mild M7.6 Earthquake CRC Press

The destructive force of earthquakes has stimulated human inquiry since ancient times, yet the scientific study of earthquakes is a surprisingly recent endeavor. Instrumental recordings of earthquakes were not made until the second half of the 19th century, and the primary mechanism for generating seismic waves was not identified until the beginning of the 20th century. From this recent start, a range of laboratory, field, and theoretical investigations have developed into a vigorous new discipline: the science of earthquakes. As a basic science, it provides a comprehensive understanding of earthquake behavior and related phenomena in the Earth and other

terrestrial planets. As an applied science, it provides a knowledge base of great practical value for a global society whose infrastructure is built on the Earth's active crust. This book describes the growth and origins of earthquake science and identifies research and data collection efforts that will strengthen the scientific and social contributions of this exciting new discipline.

Critical Earthquake Response of Elastic-Plastic Structures Under Near-Fault or Long-Duration Ground Motions: Closed-Form Approach via Impulse Input Springer

The specialty section Earthquake Engineering is one branch of Frontiers in Built Environment and welcomes critical and in-depth submissions on earthquake ground motions and their effects on buildings and infrastructures. Manuscripts should yield new insights and ultimately contribute to a safer and more reliable design of building structures and infrastructures. The scope includes the characterization of earthquake ground motions (e.g. near-fault, far-fault, short-period, long-period), their underlying properties, their intrinsic relationship with structural responses, and the true

behaviors of building structures and infrastructures under risky and uncertain ground motions. More specific topics include recorded ground motions, generated ground motions, response spectra, stochastic modeling of ground motion, critical excitation, geotechnical aspects, soil mechanics, soil liquefaction, soil-structure interactions, pile foundations, earthquake input energy, structural control, passive control, active control, base-isolation, steel structures, reinforced concrete structures, wood structures, building retrofit, structural optimization, uncertainty analysis, robustness analysis, and redundancy analysis. This eBook includes four original research papers, in addition to the Specialty Grand Challenge article, on the critical earthquake response of elastic-plastic structures under near-fault or long-duration ground motions which were published in the specialty section Earthquake Engineering. In the early stage of dynamic nonlinear response analysis of structures around 1960s, a simple hysteretic structural model and a simple sinusoidal earthquake ground motion input were dealt with together with random

inputs. The steady-state response was tackled by an equivalent linearization method developed by Caughey, Iwan and others. In fact, the resonance plays a key role in the earthquake-resistant design and it has a strong effect even in case of near-fault ground motions. In order to draw the steady-state response curve and investigate the resonant property, two kinds of repetition have to be introduced. One is a cycle, for one forced input frequency, of the initial guess of the steady-state response amplitude, the construction of the equivalent linear model, the analysis of the steady-state response amplitude using the equivalent linear model and the update of the equivalent linear model based on the computed steady-state response amplitude. The other is the sweeping over a range of forced input frequencies. This process is quite tedious. Four original research papers included in this eBook propose a new approach to overcome this difficulty. Kojima and Takewaki demonstrated that the elastic-plastic response as continuation of free-vibrations under impulse input can be derived in a closed form by a sophisticated energy

approach without solving directly the equations of motion as differential equations. While, as pointed out above, the approach based on the equivalent linearization method requires the repetition of application of the linearized equations, the method by Kojima and Takewaki does not need any repetition. The double impulse, triple impulse and multiple impulses enable us to describe directly the critical timing of impulses (resonant frequency) which is not easy for the sinusoidal and other inputs without a repetitive procedure. It is important to note that, while most of the previous methods employ the equivalent linearization of the structural model with the input unchanged, the method treated in this eBook transforms the input into a series of impulses with the structural model unchanged. This characteristic guarantees high accuracy and reliability even in the large plastic deformation range. The approach presented in this eBook is an epoch-making accomplishment to open the door for simpler and deeper understanding of structural reliability of built environments in the elastic-plastic range

Recent Advancements in Civil Engineering Springer Nature

This proceedings contains 89 papers from 25 countries and regions, including 14 keynote lectures and 17 invited lectures, presented at the Third International Conference on Geotechnical Engineering for Disaster Mitigation and Rehabilitation (3ICGEDMAR 2011) together with the Fifth International Conference on Geotechnical & Highway Engineering (5ICGHE), which was held in Semarang, Indonesia, from 18 to 20 May 2011. This is the third conference in the GEDMAR conference series. The first was held in Singapore from 12 to 13 December 2005 and the second in Nanjing, China, from 30 May to 2 June 2008. The proceedings is divided into three sections: keynote papers, invited papers and conference papers under which there are six sub-sections: Case Studies on Recent Disasters; Soil Behaviours and Mechanisms for Hazard Analysis; Disaster Mitigation and Rehabilitation Techniques; Risk Analysis and Geohazard Assessment; Innovation Foundations for Rail, Highway, and Embankments; and Slope Failures and Remedial Measures. The conference is held

under the auspices of the International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE) Technical Committee TC-303: Coastal and River Disaster Mitigation and Rehabilitation, TC-203: Earthquake Geotechnical Engineering and Associated Problems, TC-302: Forensic Geotechnical Engineering, TC-304: Engineering Practice of Risk Assessment and Management, TC-213: Geotechnics of Soil Erosion, TC-202: Transportation Geotechnics, TC-211: Ground Improvement, Southeast Asian Geotechnical Society (SEAGS), Association of Geotechnical Societies in Southeast Asia (AGSSEA), and Road Engineering Association of Asia & Australasia (REAAA).

Seismic Design Recommendations CRC Press

The nonlinear response of rigid-plastic, elastoplastic, and bilinear systems is presented in terms of the dimensionless pi-products resulting from rigorous dimensional analysis. Building on this analysis, the research shows that both linear and nonlinear structural responses from a variety of records which exhibit distinguishable pulses scale better with

the peak pulse acceleration than with peak pulse velocity, indicating that the peak pulse acceleration is a more representative intensity measure of the earthquake shaking.

Proceedings of the International Conference ICCAE, Taipei, Taiwan, November 4-6, 2016 Springer Nature Bridge Maintenance, Safety, Management, Life-Cycle Sustainability and Innovations contains lectures and papers presented at the Tenth International Conference on Bridge Maintenance, Safety and Management (IABMAS 2020), held in Sapporo, Hokkaido, Japan, April 11-15, 2021. This volume consists of a book of extended abstracts and a USB card containing the full papers of 571 contributions presented at IABMAS 2020, including the T.Y. Lin Lecture, 9 Keynote Lectures, and 561 technical papers from 40 countries. The contributions presented at IABMAS 2020 deal with the state of the art as well as emerging concepts and innovative applications related to the main aspects of maintenance, safety, management, life-cycle sustainability and technological innovations of bridges. Major topics include: advanced bridge design,

construction and maintenance approaches, safety, reliability and risk evaluation, life-cycle management, life-cycle sustainability, standardization, analytical models, bridge management systems, service life prediction, maintenance and management strategies, structural health monitoring, non-destructive testing and field testing, safety, resilience, robustness and redundancy, durability enhancement, repair and rehabilitation, fatigue and corrosion, extreme loads, and application of information and computer technology and artificial intelligence for bridges, among others. This volume provides both an up-to-date overview of the field of bridge engineering and significant contributions to the process of making more rational decisions on maintenance, safety, management, life-cycle sustainability and technological innovations of bridges for the purpose of enhancing the welfare of society. The Editors hope that these Proceedings will serve as a valuable reference to all concerned with bridge structure and infrastructure systems, including engineers, researchers, academics and

students from all areas of bridge engineering.

Select Proceedings of ACE 2020 FIB - Féd. Int. du Béton

Strong ground motion measuring and recording instruments play a major role in mitigation of seismic risk. The strong ground motion near the source of an earthquake describes the effects that endanger our built environment, and is also the most detailed clue concerning the source mechanism of the earthquake. The range of complexity that engulfs our understanding of the source parameters of a major earthquake (extent of the source mechanism, stress drop, wave propagation patterns) and how buildings and other works of construction respond to ground-transmitted dynamic effects may be overpowered by improved direct observations. Strong motion seismographs provide the information that enables scientists and engineers to resolve the many issues that are intertwined with practical problems of building safe communities worldwide. They may be installed as arrays close to major fault zones, consisting of many instruments arranged in some geometrical pattern, or

in the vicinity and mounted on buildings. This book, which contains papers by invited authorities, represents a unique interaction between seismologists and earthquake engineers who examine issues of mutual concern in an overlapping area of major interest. The papers have been grouped around three major areas. - Seismic Hazard and Extreme Motions - Engineering Uses of Strong Motion Seismograms -Arrays and Observations. *Paleoseismic Investigation at Rock Canyon, Provo Segment, Wasatch Fault Zone, Utah County, Utah* CRC Press

Presenting a comprehensive overview of recent developments in the field of seismic resistant steel structures, this volume reports upon the latest progress in theoretical and experimental research into the area, and groups findings in the following key sections: · performance-based design of structures · structural integrity under exceptional loading · material and member behaviour · connections · global behaviour · moment resisting frames · passive and active control · strengthening and repairing · codification · design and application

Held at State Key Laboratory for

Disaster Reduction in Civil Engineering, Tongji University, October 21-22, 2004 World Scientific

Earthquake Geotechnical Engineering for Protection and Development of Environment and Constructions contains invited, keynote and theme lectures and regular papers presented at the 7th International Conference on Earthquake Geotechnical Engineering (Rome, Italy, 17-20 June 2019). The contributions deal with recent developments and advancements as well as case histories, field monitoring, experimental characterization, physical and analytical modelling, and applications related to the variety of environmental phenomena induced by earthquakes in soils and their effects on engineered systems interacting with them. The book is divided in the sections below: Invited papers Keynote papers Theme lectures Special Session on Large Scale Testing Special Session on Liquefact Projects Special Session on Lessons learned from recent earthquakes Special Session on the Central Italy earthquake Regular papers Earthquake Geotechnical Engineering for Protection and Development of Environment and

Constructions provides a significant up-to-date collection of recent experiences and developments, and aims at engineers, geologists and seismologists, consultants, public and private contractors, local national and international authorities, and to all those involved in research and practice related to Earthquake Geotechnical Engineering.

Proceedings of IWEBSE 2021 National Academies Press

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.

Earthquake Geotechnical Engineering for Protection and Development of Environment and Constructions Routledge Emphasizes actual structural design, not analysis, of multistory buildings for seismic resistance. Strong emphasis is placed on specific detailing requirements for construction. Fundamental design principles are presented to create buildings that respond to a wide range of potential seismic forces, which are illustrated by numerous detailed examples. The discussion includes the design of reinforced concrete ductile frames, structural walls, dual systems, reinforced masonry structures, buildings with restricted ductility and foundation walls. In addition to the examples, full design calculations are given for three prototype structures.

Select Proceedings of 7th ICORAGEE 2020
CRC Press

This SEAOC Blue Book: Seismic Design Recommendations is the premier publication of the SEAOC Seismology Committee. The name Blue Book is renowned worldwide among engineers, researchers, and building officials. Since 1959, the SEAOC Blue Book, previously

titled Recommended Lateral Force Requirements and Commentary, has been a prescient publication of earthquake engineering. The Blue Book has been at the vanguard of earthquake engineering in California and around the world. This edition of the Blue Books offers a series of articles, that cover specific topics, some related to a particular code provision and some more general relating to an area of practice. While different than the previous editions of the Blue Books, it builds upon the tremendous effort of those who have forged earthquake engineering practice via the previous half-century of Blue Book editions. The Blue Book provides: insight and discussion of earthquake engineering concepts; interpretations of sometimes ambiguous or conflicting provisions of various codes, standards, and guidelines; and practical guidance on design implementation.

Earthquake-Induced Landslides

Springer
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.

Effects of Fault Dip and Slip Rake on Near-source Ground Motion Near-fault Ground Motion Estimates Including Directivity Effects from Large Strike-slip Earthquakes in the San Francisco Bay Area UTAM Symposium on Creep in Structures

This volume collects several extended articles from the first workshop on Best Practices in Physics-based Fault Rupture Models for Seismic Hazard Assessment of Nuclear Installations (BestPSHANI). Held in 2015, the workshop was organized by the IAEA to disseminate the use of physics-based fault-rupture models for ground motion prediction in seismic hazard assessments (SHA). The book also presents a number of new contributions on

topics ranging from the seismological aspects of earthquake cycle simulations for source scaling evaluation, seismic source characterization, source inversion and physics-based ground motion modeling to engineering applications of simulated ground motion for the analysis of seismic response of structures. Further, it includes papers describing current practices for assessing seismic hazard in terms of nuclear safety in low seismicity areas, and proposals for physics-based hazard assessment for critical structures near large earthquakes. The papers validate and verify the models by comparing synthetic results with observed data and empirical models. The book is a valuable resource for scientists, engineers, students and practitioners involved in all aspects of SHA.

Civil, Architecture and Environmental Engineering CRC Press

The specialty section Earthquake Engineering is one branch of Frontiers in Built Environment and welcomes critical and in-depth submissions on earthquake ground motions and their effects on buildings and infrastructures. Manuscripts should yield new insights and ultimately

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duration ground motions which were published in the specialty section Earthquake Engineering. In the early stage of dynamic nonlinear response analysis of structures around 1960s, a simple hysteretic structural model and a simple sinusoidal earthquake ground motion input were dealt with together with random inputs. The steady-state response was tackled by an equivalent linearization method developed by Caughey, Iwan and others. In fact, the resonance plays a key role in the earthquake-resistant design and it has a strong effect even in case of near-fault ground motions. In order to draw the steady-state response curve and investigate the resonant property, two kinds of repetition have to be introduced. One is a cycle, for one forced input frequency, of the initial guess of the steady-state response amplitude, the construction of the equivalent linear model, the analysis of the steady-state response amplitude using the equivalent linear model and the update of the equivalent linear model based on the computed steady-state response amplitude. The other is the sweeping ove ...

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