Earthquakes and **Structures**, An International Journal

Volume 9, Number 2 August 2015

CONTENTS

Alessandro Vittorio Bergami and Camillo Nuti (Italy) Experimental tests and global modeling of masonry infilled frames ————————————————————————————————————
Rajneesh Kakar (India) SH-wave propagation in a heterogeneous layer over an inhomogeneous isotropic elastic half-space 305
M. De Stefano, M. Tanganelli and S. Viti (Italy) Seismic performance sensitivity to concrete strength variability: a case-study321
Adolfo Preciado (Mexico), Gianni Bartoli (Italy) and Harald Budelmann (Germany) Fundamental aspects on the seismic vulnerability of ancient masonry towers and retrofitting techniques ————————————————————————————————————
Moosa Ebrahimi Nezhad and Mehdi Poursha (Iran) Seismic evaluation of vertically irregular building frames with stiffness, strength, combined-stiffness-and-strength and mass irregularities
Onkar G. Kumbhar, Ratnesh Kumar and Shrabony Adhikary (India) Effect of staircase on seismic performance of RC frame building
P. Kamatchi, G.V. Ramana, A.K. Nagpal, Nagesh R. Iyer and J.A. Bhat (India) Dynamic to static eccentricity ratio for site-specific earthquakes ————————————————————————————————————
Narges Easazadeh Far, Shervin Maleki and Majid Barghian (Iran) Design of integral abutment bridges for combined thermal and seismic loads415
Burak Yön, Erkut Sayın, Yusuf Calayır, Zülfü Çınar Ulucan, Mehmet Karataş, Hümeyra Şahin, Kürşat Esat Alyamaç and Abdullah Tevfik Bildik (Turkey) Lessons learned from recent destructive Van, Turkey earthquakes —————431



ISSN: 2092-7614(print), ISSN: 2092-7622(online)

ctures

An International Journal of

Earthquake Engineering & Earthquake Effects on Structures

Editors-in-Chief

S.A. Anagnostopoulos

University of Patras, Greece

Nicos Makris

University of Central Florida, USA

Keh-Chyuan Tsai

National Taiwan University, Taiwan

Techno-Press

Volume 9, Number 2, August 2015

Vol. 9, No. 2

ISSN: 2092-7614(print), ISSN: 2092-7622(online)

Earthquakes and Structures, An International Journal

Honorary Editor-in-Chief

Prof. Shih-Chi Liu

Division of Civil and Mechanical Systems, The National Science Foundation, 4201 Wilson Boulevard, Arlington, VA 22230, USA E-mail: sliu@nsf.gov

Editors-in-Chief

Prof. Stavros A. Anagnostopoulos (European Ed.)

Dept. of Civil Engineering University of Patras 265 00 Patras. Greece

E-mail: saa@upatras.gr

Prof. Nicos Makris (American Ed.) University of Central Florida, Florida 32816-2450, USA E-mail: Nicos.Makris@ucf.edu

Prof. Keh-Chyuan Tsai (Asia-Pacific Ed.) Dept. of Civil Engineering

National Taiwan University, Taipei 10617, Taiwan

E-mail: kctsai@ntu.edu.tw

Managing Editor

Prof. C. K. Choi, Ph. D.

Dept. of Civil & Environmental Engineering

Korea Advanced Institute of Science & Technology, Daejeon 305-701, Korea, E-mail: cck@kaist.ac.kr

Editorial Board

(in alphabetical order)

Manuscript Editor Juri Yoo

Prof. A. Benavent-Climent University of Granada Granada E-18071, Spain

Prof. Rita Bento Instituto Superior Tecnico 1049-001 Lisbon, Portugal

Prof. Shuenn-Yih Chang National Taipei University of Technology Taipei 106, Taiwan

Prof. C.C. Chou National Taiwan University

Tainei 10764 Taiwan Prof. Nawawi Chouw

University Auckland Auckland 1010. New Zealand

Prof. M.C. Constantinou University at Buffalo Buffalo, NY 14260, USA

Prof. Raiesh Dhakal University of Canterbury Private Bag 4800, New Zealand

Prof. M. Fardis University of Patras GR26504, Patras, Greece

Prof. Aurelio Ghersi University of Catania

Catania 95100, Italy Prof. Russell A. Green Virginia Tech

Blacksburg, VA 24061, USA Prof. J.S. Hwang

Auckland 1010, New Zealand

Nat Taiwan Univ of Sci & Technol Taipei 106, Taiwan Prof. Jason Ingham University of Auckland

Prof. R.S. Jangid Indian Institute of Technology Mumbai 400076. India

Gdansk University of Technology 80-233 Gdansk, Poland

Korea Adv Inst of Sci & Tech Daejeon 305-701, Korea

Prof. Thomas Kang Seoul National University

Gwanak-gu, Seoul 151-744, Korea Prof. Petros Komodromos University of Cyprus

Nicosia 1678, Cyprus Prof. S. Lagomarsino

University of Genoa Genova I-16145, Italy

Prof. Nelson Lam University of Melbourne Victoria 3010 Australia

Prof. H.S. Lee Korea University Seoul 136-701, Korea

Prof. Chunxiang Li Shanghai Jiao Tong University Shanghai 200030, Peoples R China

Prof. Dimitrios G. Lianos McGill University Montreal Quebec H3A 2K6 Canada

Prof. Jerome P. Lynch University of Michigan Ann Arbor, MI 48109-2125, USA

Indian Institute of Science Bangalore 560 012, India

Prof. R. Jankowski

Prof. Fabrizio Mollaioli Sapienza University of Rome Rome 00197 Italy

> Dr. Naohiro Nakamura Takenaka Corporation

Prof G Manolis

Aristotle University

University of Genoa

Genova I-16145, Italy

Prof. Yuji Miyamoto

Osaka 565-0871, Japan

Thessaloniki 54124. Greece

Prof. Jason P. McCormick

Chiba 270-1395, Japan Prof. Camillo Nuti

The University of Rome Three Rome 00184, Italy Prof. Jamie Ellen Padgett

Rice University Houston, TX 77005, USA Prof. S.J. Pantazopoulou

University of Cyprus Prof. Apostolos Papageorgiou

University of Patras Patras 265 00, Greece Prof. Jorge Ruiz-Garcia Univ Michoacana de San Nicolas de Hidalgo

Michoacan Mexico Prof. Lothar Stempniewski Karlsruhe Institute of Technology(KIT) Karlsruhe 76131, Germany

Prof. Haluk Sucuoglu Middle East Technical University Ankara TR-06531, Turkey

Dr. Timothy Sullivan

Pavia I-27100, Italy Prof. Hideo Takabatake Kanazawa Institute of Technology

Ishikawa 924-0838, Japan Prof. Tsuyoshi Takada University of Tokyo Tokyo 113-8656, Japan

University of Pavia

Prof. Izuru Takewaki Kvoto University Kvoto 615-8540, Japan

Prof. J.L. Tassoulas University of Texas at Austin Austin, TX 78712-0273, USA

Prof. Amador Teran-Gilmore Universidad Autonoma Metropolitana Mexico City 02200, Mexico

Prof. T. Triantafyllou University of Patras

Patras 265 00 Greece Prof. Tomaso Trombetti University of Bologna Bologna 40136, Italy

Prof. Radu Vacareanu Technical U of Civil Engineering Bucharest RO-020396, Romania

Prof. Aspasia Zerva Drexel University Philadelphia PA 19104 USA

Prof. Yunfeng Zhang University of Maryland

Subscription information

The Earthquakes and Structures, An International Journal (abbr: Earthq. Struct. Int. J.) is published monthly on 25th day of every twelve months (Inaqurated 2010). The basic subscription price (print+e) for 2015 including postage by surface mail is US\$456 for institutional subscription and US\$133 for personal sub. For delivery by air mail, add US\$64. Subscription orders and/or enquiries should be sent to Techno-Press, P.O. Box 33, Yuseong, Daejeon 305-600, Korea. Tel: (+82-42) 828-7995, Fax: (+82-42) 828-7997, e-mail: technop8@chol.com

Copyright © 2015 Techno-Press, Ltd.

Aims and Scope

The Earthquakes and Structures, An International Journal, focuses on the effects of earthquakes on civil engineering
structures. The journal will serve as a powerful repository of technical information and will provide a high-impact
publication platform for the global community of researchers in the traditional, as well as emerging, sub-disciplines of
the broader earthquake engineering field. Specifically, some of the major topics covered by the Journal include:
characterization of strong ground motions, \square quantification of earthquake demand and structural capacity, \square design of
earthquake resistant structures and foundations, \square experimental and computational methods, \square seismic regulations
and building codes, \square seismic hazard assessment, \square seismic risk mitigation, \square site effects and soil-structure
interaction, assessment, repair and strengthening of existing structures, including historic structures and
monuments, and emerging technologies including passive control technologies, structural monitoring systems, and
cyberinfrastructure tools for seismic data management, experimental applications, early warning and response

Instructions to Authors

1. Submission of the paper

Authors are asked to submit manuscripts in PDF format electronically through the Techno-Press Manuscript Upload System (TeMUS) (http://www.techno-press.org/papers). Exceptionally, the special issue papers may be directly submitted to the Guest Editor. If you have difficulties in using TeMUS, please contact us at [technop8@chol.com]. On receiving submitted papers, the system will issue the paper ID and Password to the corresponding author which may be conveniently used to check the status of submitted papers.

2. Preparation of the manuscript

General: The manuscripts should be in English and typed with single column and single line spacing on single side of A4 paper. Submitted papers will be published in three categories, i.e., 1) Regular technical paper, 2) Review papers and 3) Discussions. The first page of an article should contain; (1) a title of paper which well reflects the contents of the paper (Arial, 16pt), (2) all the name(s) and affiliations(s) of authors(s) (Arial, 12pt), (3) an abstract of 100~250 words (Times New Roman, 11pt), (4) 5-10 keywords following the abstract, and (5) footnote (personal title and email address of the corresponding author (required) and other authors' (not mandatory)). The paper should be concluded by proper conclusions which reflect the findings in the paper. The normal length of the technical paper should be about 14-20 journal pages

Please refer to Author's Guide: http://www.techno-press.org/papers/appendix/Appendix_A.pdf, and Template for the format of the first page of the paper: http://www.techno-press.org/papers/appendix/appendix_b.doc

Tables and figures: Tables and figures should be consecutively numbered and have short titles. They should be referred to in the text as following examples (e.g., Fig. 1(a), Figs. 1 and 2, Figs. 1(a)-(d) / Table 1, Tables 1-2), etc. Tables should have borders (1/2pt plane line) with the captions right before the table. Figures should be properly located in the text as an editable image file (.jpg) with captions on the lower cell. All of the original figures are required at the end of the manuscript for reference in editing.

Units and mathematical expressions: It is desirable that units of measurements and abbreviations should follow the System Internationale (SI) except where the other unit system is more suitable. The numbers identifying the displayed mathematical expression should be placed in the parentheses and referred to in the text as following examples (e.g., Eq. (1), Eqs. (1)-(2)). Mathematical expressions must be inserted as an object (set as Microsoft Equations 3.0) for Microsoft Word 2007 and after versions. Image-copied text or equations are not acceptable unless they are editable. The raised and lowered fonts cannot be used for superscription and subscription.

References: A list of references which reflect the current state of technology in the field locates after conclusions of the paper. For details to prepare the list of references and cite them in the text, authors are advised to follow the introduction and the sample list in the Author's Guide of the instruction.

All the submitted papers will undergo a peer-review process, and those papers positively recommended by at least two expert reviewers will be finally accepted for publication in the Techno-Press Journals or after any required modifications are made.

Proofs will be sent to the corresponding author to correct any typesetting errors. Alterations to the original manuscript will not be accepted at this stage. Proofs should be returned within 48 hours of receipt.

5. Copyright

Submission of an article to a Techno-Press Journal implies that it presents the original and unpublished work, and not under consideration for publication elsewhere. On acceptance of the submitted manuscript, it is implied that the copyright thereof is transferred to the Techno-Press. The Transfer of Copyright Agreement may also be submitted.

For the policies on the research and publication ethics not stated in this instructions, International standards for editors and authors (http://publicationethics.org/international-standards-editors-and-authors) can be applied. Violation of publication ethics will result in the activation of COPE flow chart. (http://home.jeet.or.kr/Flowcharts.pdf)

7. Publication Fee

There will be no page charges and no other fees unless the author wishes arrangements to provide an open access to his article.