Soil Dynamics and Earthquake Engineering VII

EDITORS:

A.S. Çakmak
Princeton University, USA

C.A. Brebbia
Wessex Institute of Technology, UK

Computational Mechanics Publications
Southampton  Boston
CONTENTS

SECTION 1: DYNAMIC PROPERTIES OF SOILS, PENETRATION AND IMPACT

Analytical study of simplified in situ torsional cylindrical impulse shear test
_R. Henke, W. Henke_

Impact assessment of highway foundation layers
_P. Fleming_

Empirical correlations $V_{so}-N_{SPT}$ for soils of Greece: a comparative study of reliability
_G.A. Athanasopoulos_

Young's moduli of sands under different types of loading
_X.J. Zhang, M.S. Aggour_

Conforming infinite elements for FE-calculations in soil dynamics
_A. Becker, K.-U. Schenkengel_

Dynamic behaviour of partially saturated sand
_H. Meißner, A. Becker_

Identification of the layered half-space Green's function
_A. Umek, I. Špacapan_

Displacement rate and shear direction effects on the residual strength of plastic soils
_A.N. Parathiras_

Seismic response of municipal solid waste landfills
_S. Singh_

Soil-structure interaction effects on flexural and torsional vibrations of perforated cores
_D. Capuani, R. Klein, H. Antes_
A laboratory investigation of ground compaction settlement induced by vibrodriving of piles
R.A.P. Bement, A.R. Selby

Dilatancy characteristics of sand
A. Peiris, N. Yoshida

Embankment train track on soil stratum and wave impeding block (WIB) measured for vibrations reduction
Hirokazu Takemiya, Kyo-Seong Shim, Kazuya Goda

SECTION 2: LIQUEFACTION

Numerical simulation for up-lifted manhole during liquefaction
S. Takada, J. Ueno

A study on the mechanism of the floatation of buried pipes due to liquefaction
Susumu Yasuda, Hideo Nagase, Shigeru Itafuji, Hisashi Sawada, Keiichiro Mine

Effect of the amplitude of shear strain on the energy density at the onset of liquefaction
L. Liang, J. Ludwig Figueroa, A.S. Saada

A two-dimensional model for the evaluation of liquefaction potential of earth dams
A.N. Yiagos

An anti-liquefaction design method for SCP-improved sandy grounds
K. Fuchida, T. Akiyoshi, H. Matsumoto, T. Hyodo

Liquefaction potential of silty soils
D. Erten, M.H. Maher

Efficiency of absorbing boundary conditions for fluid-saturated porous media
T. Akiyoshi, K. Fuchida, H.L. Fang

Effect of prestress on the liquefaction potential of silty sands
C. Stamatopoulos, A. Stamatopoulos, P. Kotzias
SECTION 3: EARTHQUAKE HAZARDS, SEISMIC ZONING AND RISK ANALYSIS

Micro-zoning for earthquakes in a developing country: Quito, Ecuador
*J. Valverde, F. Kaneko, C. Villacis, W.D. Liam Finn, B. Tucker*

Assessment of liquefaction potential in El-Fayoum area, Egypt
*A.M. Abdel-Rahman, N.S. Guirguis, A. El-Gindy*

Development on an earthquake induced landslide
*K.F. Mobley*

Macroseismic intensity versus distance: constraints to the attenuation model
*L. Peruzza*

SECTION 4: GROUND MOTIONS AND ENGINEERING SEISMOLOGY

Seismic response of irregularly stratified media using the indirect boundary element method
*F.J. Sánchez-Sesma, R. Vai, J.M. Castillo, F. Luzón*

Appropriateness of rotary spectral analysis for the study of array observation records
*T. Chiba, J. Kimura*

Seismic response of three-dimensional topographies
*F. Luzón, F.J. Sánchez-Sesma*

Analysis of multi-mode signals of the SASW method
*M.O. Al-Hunaidi, J.H. Rainer*

Influence of the mathematical modeling of the seismic input on the stochastic response of structural frames
*S.E. Ruiz*

Interfacial waves between pre-stressed solids and fluids
*D.A. Sotiropoulos*

Some effects of the layering of the soil on wave propagation and foundation vibrations
*L. Auersch*
Site effects on 3D elevated topography  
*D. Clouteau, D. Aubry*  

Observation of propagating elastic waves in granular soils by the pulse transmission method  
*Koichi Nakagawa, Kenichi Soga*  

Application of a spectral element method to wave propagation in multiphase porous media  
*G. Degrande, G. De Roeck, P. Van den Broeck*  

Rate of earthquake-induced settlement of level ground  
*H. Matsuda*  

Using explosives to simulate earthquakes in a centrifuge  
*G. Belloni, A. Girotti, M. Carfagni*  

**SECTION 5: SEISMIC CODES AND DAMAGE, SAFETY STRATEGIES AND CONTROL**  

The vulnerability concept revisited  
*T.P. Tassios*  

An integrated earthquake damage and loss methodology through GIS  
*A.S. Kiremidjian, S. King*  

Prediction of global damage and reliability based upon sequential identification and updating of RC structures subject to earthquakes  
*S.R.K. Nielsen, P.S. Skjærbæk, H.U. Köylüoglu, A.S. Çakmak*  

A simple method for estimating the maximum softening damage index  
*C.L. Mullen, R.C. Micaletti, Jr., A.S. Çakmak*  

Passive control techniques in earthquake engineering  
*S. Kim*  

Analytical formulation of fragilities  
*A. Singhal, A.S. Kiremidjian*
Assessing damage for Herkenbosch, The Netherlands, due to the Roermond earthquake of April 13, 1992
P.M. Maurenbrecher, G. de Vries

Evaluation of dynamic site response for seismic design of pipelines
I.V. Constantopoulos, F. Lagasco, F. Pelli

SECTION 6: UNDERGROUND STRUCTURES, DESIGN OF DAMS AND SLOPES

Stability of a coal longwall
I. Mizgala, M. Zacharski

Laboratory identification of the quality factor Q: comparative presentation and evaluation of spectral ratio and rise time methods
N.S. Klimis

Seismic analysis of 3D subway tunnels
H. Wang

Seismic coefficients for steep slopes
S.A. Ashford, N. Sitar

Reservoir-dam-soil interaction: a comparative study
S.A. Medrano, P. Obernhuber, G. Zenz

SECTION 7: FOUNDATION VIBRATIONS, PILE FOUNDATIONS

Seismic response analysis of pile foundations
W.D. Liam Finn, G. Wu, T. Thavaraj

A new method for dynamic analysis of pile groups
G. Wu, W.D. Liam Finn

Nonlinear seismic response of single piles
N. Makris, D. Badoni

Dynamic soil-structure interaction for non-axisymmetrical foundations
M. Suarez, F.J. Sánchez-Sesma
Comparison of experimental and dynamic analysis results for soil structure interaction problems
B.G. Badalouka, G.A. Papadopoulos

Discrete model for foundation-soil-foundation interaction
J.S. Mulliken, D.L. Karabalis

Structural vibration isolation by rows of piles
S.E. Kattis, D. Polyzos, D.E. Beskos

Analysis of machine foundations on undrained (incompressible) soils
T.G. Davies, S. Bu

Dynamical analysis of planar frame-wall systems on pile groups
G. Oliveto, A. Greco, A. Santini

A prediction method for the installation of vibratory driven piles
D. Van Rompaey, C. Legrand, A. Holeyman

Geotechnical aspect of the Hokkaido-toho-oki earthquake of October 4, 1994
K. Wakamatsu, N. Yoshida, I. Suetomi

SECTION 8: SEISMIC RESPONSE, VIBRATION ISOLATION

Traffic-induced vibration in buildings - use of site cut-off frequency as a remedial measure
M.O. Al-Hunaidi, J.H. Rainer, G. Pernica, M. Tremblay

Shaking table tests of gravity retaining walls
E. Cascone, M. Maugeri

The influence of soil-structure interaction on the overall damping of structures with high damping
O. Chuanromanee, R.D. Hanson, R.D. Woods

The response of framed structures on elastic foundations to ground motion
L.A. Dalguer, C.L. Sahlit, P.W. Partridge

Seismic behavior of nonstructural components: window glass panels
H. Sucuoglu, C.V. Girija Vallabhan
Results of traffic and ambient vibration testing of bridges
A.J. Karabinis

Correlation analysis of non-stationary vibrations of a large
system excited by seismic process
J. Náprstek, O. Fischer

Nonlinear behavior of reinforced concrete structures in relation
with seismic acceleration parameters
A. Elenas, A. Liolios, L. Vasiliadis, S. Tsalkatidis

Preliminary investigation of using transformed damping
coefficients in time domain analysis
D.-W. Chang

SECTION 9: SEISMIC BEHAVIOUR OF HISTORICAL STRUCTURES

Seismic performance of the “Sacro Convento di Assisi - Palazzo
Papale” associated with static losses: a static and dynamic
monitoring system
G. Bongiovanni, P. Marsan, R.W. Romeo

A hierarchy of numerical models for SSI analysis of buried
pipelines
G.D. Manolis, K. Pitilakis, P. Tetepoulidis, G. Mavridis

Properties and technology of the crushed brick mortars of Hagia
Sophia
A. Moropoulou, A.S. Çakmak, A. Bakolas, K. Labropoulos,
K. Bisbikou

Authors' index