

## Civil Engineering

**Sharif**

3

Fall  
2014

Editor-in-Chief: Abolhassan Vafai

This Journal is published under the auspices of Sharif University of technology, Office of the Vice-Chancellor-in-Charge of Research.

The Journal is published quarterly in Farsi language, aims at establishing a relationship between scientists active in different branches of science and technology and, in particular, at providing a forum for exchange of knowledge between scientists and technologists related to scientific problems prevailing in contemporary society. The journal also strives to present practical and theoretical analyses of these issues and facilitates the circulation of modern scientific findings by scientists and researchers for practical application. In addition, “**Sharif**” publishes original papers focusing on issues of specific concern to universities, including research, technological advancements, and topics related to matters of higher education.

**P.O.BOX 11155-8639 AZADI AVENUE, TEHRAN, I.R. IRAN**  
**Phone: (98-21) 66005419 - 66164093 Fax: (98-21) 66012983**  
**Web: <http://journal.sharif.ir/> [http:// www. globalsciencejournals.com](http://www.globalsciencejournals.com)**  
**E-mail: [pajouhesh@sharif.edu](mailto:pajouhesh@sharif.edu)**

## CONTENTS

- 3 **A MODIFIED CONSTITUTIVE MODEL FOR SIMULATION OF SILTY SAND BEHAVIOR**  
A. Lashkari
- 15 **NUMERICAL STUDY OF EFFECTIVE MECHANISMS ON SEISMIC RESPONSE OF UNDERGROUND STRUCTURES BURIED IN LIQUEFIABLE SANDY SOIL**  
S. Moshirabadi and M. S. Mohammadi
- 27 **EXPERIMENTAL INVESTIGATION OF AT-REST LATERAL PRESSURE OF AN ARTIFICIALLY PREPARED SAND-BENTONITE MIXTURE**  
M. Monghasem and M. Ajdari
- 33 **NEW OPTIMAL SMOOTHED BASE-SHEAR DISTRIBUTION PATTERN FOR SEISMIC DESIGN OF PLANAR MOMENT FRAMES**  
M. Shahrouzi and A.A. Rahemi
- 43 **OPTIMUM SEISMIC REHABILITATION OF STEEL MOMENT FRAMES USING THE UNIFORM DEFORMATION METHOD**  
R. Karami Mohammadi and M. Mirjalali
- 51 **INVESTIGATION OF EMPIRICAL METHODS FOR DETERMINING BEARING CAPACITY OF ROCK-SOCKETED PILES**  
S. Rezazadeh, A. Eslami and A. Jafary
- 65 **DECOUPLED EQUATIONS METHOD FOR SOLVING TWO-DIMENSIONAL ELASTODYNAMIC PROBLEMS IN THE FREQUENCY DOMAIN**  
M. Mirzajani and N. Khaji
- 75 **EVALUATION OF CAST-IN-PLACE CONCRETE PILES CAPACITY BY COMPRESSIVE PILE LOAD TESTING IN SAND**  
I. Shooshpasha and M. Sharafkhah
- 85 **EVALUATION OF SHORT PILES BEARING CAPACITY SUBJECTED TO LATERAL LOADING IN SANDY SOIL**  
J. Bolouri Bazaz and J. Keshavarz
- 97 **PERFORMANCE OF NATURAL ZEOLITES FOR REDUCING THE AMOUNT OF GROUNDWATER SALINITY**  
M. Borghei, M. Lahijani, A. H. Hassani, M. Salari and M. Sayadi
- 107 **FLUID FLOW MODELING IN DISCONTINUOUS ROCK MEDIA USING A DISTINCT FRACTURE NETWORK**  
M. Javadi and M. Sharifzadeh

### RESEARCH NOTES:

- 117 **SELECTING THE OPTIMUM PROJECT DELIVERY SYSTEM USING ANALYTIC HIERARCHY PROCESS**  
K. Barati and M. Mofid
- 125 **INVESTIGATIONS INTO THE MECHANICAL PROPERTIES OF CONCRETE CONTAINING CERAMIC FLOOR TILE AND SILICA FUME**  
A. Heidari and D. Tavakoli
- 135 **ASSESSMENT OF CONVERSION COEFFICIENTS OF DESIGN BASED EARTHQUAKE ACCELERATION TO ACCELERATIONS OF DIFFERENT SEISMIC RISK LEVELS FOR THE CITIES OF SARI AND FEREDOUNSHAHR**  
M. Mahmoudi, A. Soltani and S. Seyedi

### APPENDIX

- 156 **ABSTRACTS OF PAPERS IN ENGLISH**