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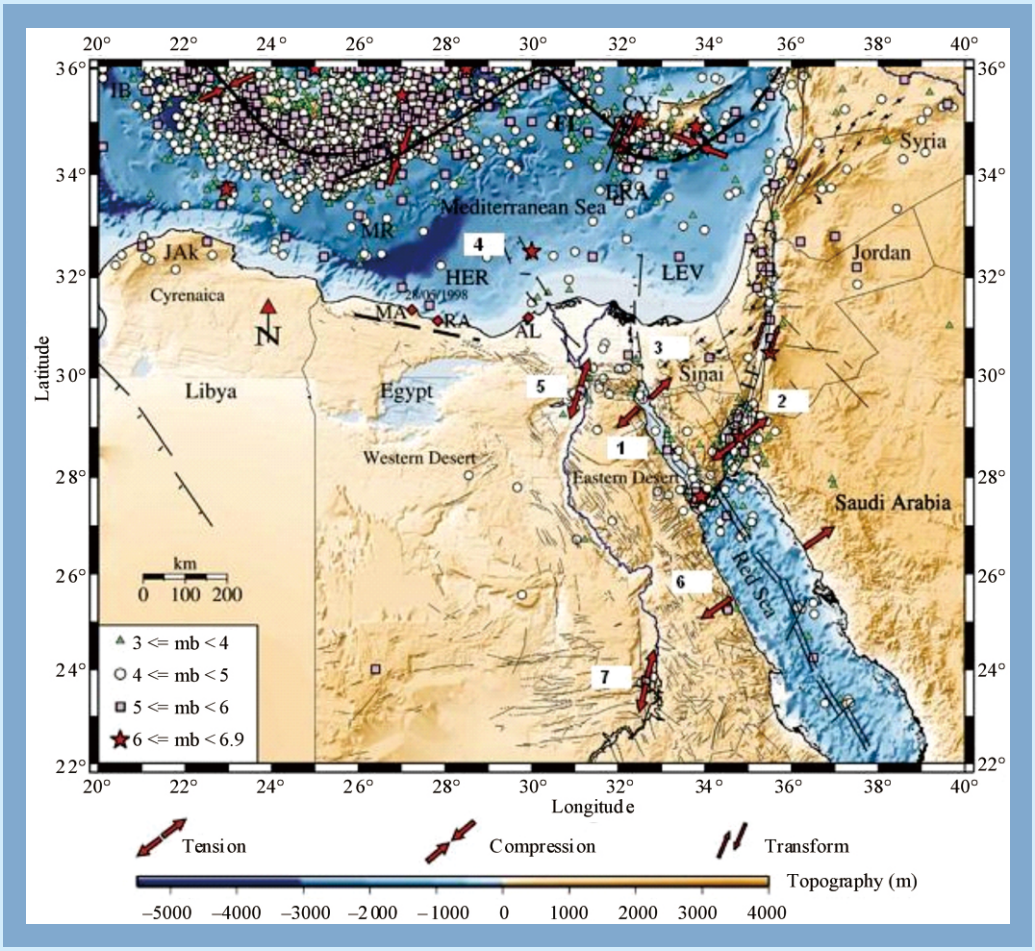
Special Issue on "Earthquakes"

Natural Science



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Earthquakes
Special Issue of Natural Science
Vol.4, Special Issue, August 2012

Preface

Earthquakes represent the first natural disaster causing enormous life loss and severe destruction to engineering structures and critical facilities worldwide. In fact, despite recent progress in various fields of science, technology and engineering (e.g., early warning systems, digital recording seismographs, high-speed computers and modern design methods and seismic codes), earthquakes remain a serious threat to people's life and to economy in de- veloping and developed countries at the same time. For instance, the 2010 Haiti earthquake and the 2011 Japan earthquake are shocking examples on what *earthquakes* can cause. The Haiti earthquake killed more than 250,000 persons and left a long-term suffer to the people of that country. On the other hand, the 2011 off the pacific coast of Tohoku Japan earthquake and the associated tsunami not only caused a severe economy loss but also resulted in a nuclear threat due to the crush of the Fukushima nuclear power plant.

This special issue of Natural Science, entitled *Earthquakes*, tackles a wide range of re- search subjects related to earthquakes, including their nature, measures, causes of occurrence, characteristics, attenuation modeling, soil wave amplification, methods and tools of recording, analysis and prediction, their effect on the built environment and methods of design, analysis, assessment, control and repair of engineering structures against seismic loads resulting from earthquakes. This special issue of Natural Science considers also other related subjects on explosions and volcanic phenomena and hyperbaric-Oxygen treatment due to crush injury resulting from earthquakes. The special issue contains fourteen research papers written by researchers and experts from several countries.

The first paper examines the influence of the solar activity on earthquakes by investigating whether the sun trigger earthquakes or not. The second paper deals with the multi-parametric forecasting and analysis of seismic and volcanic phenomena. The third paper tackles the attenuation tomography of Egypt. The relationship between the Modified Mercalli Intensity and the Peak Ground Acceleration in Myanamar is investigated in the fourth paper. In the fifth paper, the applicability of soil amplification factors as defined by NEHRP in Israel is ex- amined. A case study on the erosion and sediment budget of the 2008 Wenchuan earthquake in Mianyuan River basin is studied in the sixth paper. The derivation of the Gutenberg-Richter empirical formula from the solution of the generalized logistic equation is investigated in the seventh paper. In the eighth paper, the explosion and seismic phenomena based on exciting acoustic-electromagnetic waves are explored. Paper number nine focuses on the prognostic properties of low-frequency seismic noise. A new strategy for preventing structures damage against earthquakes is introduced in paper number ten. The eleventh paper deals with the op- timum seismic design and earthquake-resistant design evaluation of low-rise framed RC struc- tures.

Paper number twelve handles the seismic pounding and collapse behavior of neighboring buildings with different natural periods. The response of Venezulelan code-designed high-rise steel framed buildings with Chevron-braces is studied in paper number thirteen. The last paper tackles the hyperbaric-Oxygen treatment as an adjunctive therapy in acute renal failure due to crush injury.

I hope the research reported in this special issue will be of help to seismologists, geo- technical and structural engineers, graduate students and researchers. The guest editor would like to thank the contributors of the special issue for their cooperation during the review and production of their papers. Finally, thanks to Judy Liu, the Editorial Manager of Natural Science, for her effort in managing and producing this special issue.

Prof. Abbas Moustafa
Guest Editor

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The figure on the front cover is from the article published in Natural Science, 2012, Vol. 4, Special Issue, pp. 608-623 by Elsayed Fergany, Mamdouh Abass and Carlos Vargas.

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Summary: This special issue of Natural Science, entitled *Earthquakes*, tackles a wide range of research subjects related to earthquakes, including their nature, measures, causes of occurrence, characteristics, attenuation modeling, soil wave amplification, methods and tools of recording, analysis and prediction, their effect on the built environment and methods of design, analysis, assessment, control and repair of engineering structures against seismic loads resulting from earthquakes. This special issue of Natural Science considers also other related subjects on explosions and volcanic phenomena and hyperbaric-Oxygen treatment due to crush injury resulting from earthquakes. The special issue contains fourteen research papers written by researchers and experts from several countries.

↘ Submission Guidelines

Original and unpublished contributions that must not currently be under review by another journal are solicited. All manuscripts should be submitted through the NS online submission system, please include an indication of your intention to publish within the special issue to be entitled "Special issue-Earthquakes".

↘ Important Dates

Submission Deadline: June 30th, 2012
Notification of Acceptance: July, 2012
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↘ Guest Editor

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