Earthquake Resistant Engineering Structures V

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Preface

Earthquake mitigation remains an engineering topic of paramount scientific importance, as demonstrated by the tragic events following the Sumatra earthquake and tsunami of December 24th, 2004 that reverberated across the globe and generated world-wide sympathy for the victims and their plight.

The problem of protecting the built environment in earthquake-prone regions of the world is multi-faceted since it involves not only innovative design and construction of new facilities, but also upgrading and rehabilitation of existing structures and infrastructure. The latter is a daunting and expensive task, which can only be accomplished gradually. Given however the inestimable loss of life and huge financial cost associated with major earthquakes in densly populated areas, it becomes clear that earthquake mitigation is an important challenge for the global engineering community and a major social priority for national goverments in seismically-prone countries. The ultimate goal is earthquake prepardness, which broadly speaking has to do with the construction and maintenance of earthquake-resistant infrastructure, functioning earthquake warning systems, a post-earthquake recovery apparatus, and an educated citizenry capable of reacting rationally in the face of seismic danger.

ERES 2005 is the fifth such international conference focusing, as its name implies, on earthquake-resistant engineering structures. The first took place in Thessaloniki, Greece in 1996 and the other three in Catania, Italy in 1999, in Malaga, Spain in 2001 and in Ancona, Italy in 2003. As originally envisioned, these scientific meetings provided a forum for the discussion of basic and applied research in earthquake engineering that is relevant to improved structural design. All the conferences have spawned volumes with proceedings that have generated substantial interest in the engineering community, plus a number of specialized volumes comprising the series on 'Advances in Earthquake Engineering' issued since 1996 by WIT Press of Southampton.

This conference aims to project state-of-the-art information regarding the analysis and design cycle of structures subjected to earthquakes. This includes a wide list of topics, which can be summarized as follows: geophysical and geotechnical aspects; seismic behavior and vulnerability; structural dynamics; seismic isolation and control; monitoring and testing; risk reduction; and earthquake-resistant design. In terms of applications, we have issues such as the following: site effects; building safety; heritage buildings; bridges; underground structures; lifeline systems;

foundations; energy absorption systems; retrofit and rehabilitation; seismic codes and regulations.

The editors of this volume are grateful to all the authors and to all the participants, as well as to the International Scientific Advisory Committee, for their support of the conference. The Conference has been co-organised by the Wessex Institute of Technology, the University of Patras, the Aristotle University of Thessaloniki and the National Technical University of Athens.

The Editors,
2005

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