## GEOTECHNICAL SPECIAL PUBLICATION 140

# Slopes and Retaining Structures Under Seismic and Static Conditions

EDITED BY Mohamed Gabr, Ph.D., P.E. John J. Bowders, Ph.D., P.E. David Elton, Ph.D., P.E. Jorge G. Zornberg, Ph.D., P.E. GSP 140:

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## SLOPES AND RETAINING STRUCTURES UNDER SEISMIC AND STATIC CONDITIONS

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> EDITED BY Mohamed A. Gabr, Ph.D., P.E. John J. Bowders, Ph.D., P.E. David Elton, Ph.D., P.E. Jorge G. Zornberg, Ph.D., P.E.





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### Preface

Design of slopes and retaining structures continue to pose wide challenges to geotechnical engineers. These include long term performance under static and seismic conditions and in harsh environments as well as the issues related to use of non-traditional backfills and the reliability of the constructed systems throughout the design life. Several of the challenges related to design and construction of slopes and retaining structures are addressed with the increased utilization of geosynthetics over the past two decades. The level of activities associated with geosynthetics reinforcement range from paved and unpaved roads to the construction of segmental retaining walls and slopes. In these proceedings, field and laboratory performance of retaining walls and slopes under seismic and static conditions are premiered. National and international experts present their perspectives regarding performance of reinforced and unreinforced pavement systems, slopes and retaining structures in harsh environments and under severe conditions.

This Geotechnical Specialty Publication (GSP) includes papers presented in the Slope and Retaining Structures (SRS) track at the ASCE Geo-Institute specialty conference, Geo-Frontiers 2005 in Austin, Texas. Several of the sessions were sponsored by the G-I Geosynthetics committee. All papers in these proceedings have been peerreviewed by two anonymous reviewers in accordance with ASCE and the Geo-Institute. Required revisions were made by the authors prior to final acceptance and publication. All papers are eligible for discussion in the ASCE *Journal of Geotechnical and Geoenvironmental Engineering* and for ASCE awards. The editors wish to express sincere thanks to the session chairs for their diligence, and to all of the reviewers for their willingness to help and prompt responses.

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