

Administrative report: TC4 - Earthquake geotechnical engineering

Compte rendue sur la CT-4

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TERMS OF REFERENCE

1. To promote the development of the state of practice in earthquake geotechnical engineering.
2. To evaluate and develop the concept of performance based design for earthquake geotechnical engineering
3. To organize the 3rd International TC4 Conference on Earthquake Engineering
4. To work with the new ISO working group, ISO/TC98/WG10 on seismic actions on geotechnical structures.

ACTIVITIES IN PERIOD 2001-2005

A satellite conference on “Lessons learned from recent strong earthquakes” was held in Istanbul on August 25th 2001, just before the 15th ICSMGE.

During the 15th Conference a workshop was held as part of the conference program on pile foundations in liquefiable soils. A meeting was held of the TC-4 Committee at which the terms of reference for the committee, given above, were formulated.

In 2001 TC-4 produced 2 publications: a revised edition of the Manual on Seismic Zonation on Natural Hazards which had been published by TC-4 in 1999 and Case Histories of Post-Liquefaction Remediation. In both cases the Japanese Geotechnical Society supported publication.

Two meetings of TC-4 were held in 2002; one in Anchorage, Alaska in June during a workshop on liquefaction and one in Tokyo in December during a similar workshop. In Alaska we reviewed our 4-year agenda and confirmed the plans outlined earlier by me to ISSMGE. In Tokyo we made final plans for the 3rd International Conference on Earthquake Engineering to be held in Berkeley, California in January, 2004.

To avoid a serious conflict of conference schedules, we resolved to combine the TC4 Conference with the 11th International Conference on Soil Dynamics and Earthquake Engineering, which was planned for December, 2003. The joint conference was held in Berkeley in January 2003. Organizational expenses were supported by the Engineering Society in Singapore as a sponsor of 11th SDEE conference.

Work is progressing on our project on performance based design of earth structures. At the Berkeley Conference during a TC-4 meeting, Professor Towhata gave a progress report on his

research on performance based design. Papers by Towhata and his research student on their work on performance based design appeared in the Journal of the Japanese Geotechnical Society this year. A paper by the Chairman on evaluating pile cap stiffnesses for performance based design of critical structures was presented as a keynote lecture at the 13th World Conference on Earthquake Engineering.

Work continues in developing the concept of performance based design for the design and evaluation of earth structures and foundations.

TC4 organized a one day symposium on seismic soil-structure interaction in Prague, August 25, in association with the European Geotechnical Conference.

The Chairman as a representative of TC-4 ISSMGE participated in the work of the ISO working group drafting a code on seismic design of earth structures. In addition several other members of TC-4 attended some meetings and made individual contributions. In addition to individual contributions to the text and editing, participation involved meetings in London, Oslo, Prague, Paris and Turin. The final report has been accepted and approved. The Chairman of the ISO Group wrote to TC-4 expressing his appreciation of the contributions made by TC-4 members.

TC-4 has been working in close cooperation with ATC-3 which is an Asian Committee concerned with geotechnical natural hazards. The chairman was invited to membership in this committee.

Jointly sponsored activities were

2-sessions at the Asian Regional Conference in August 2003 entitled “Diversity and common features of recent geotechnical natural hazards” and “Potential of geotechnical natural hazards.”

Joint Japan-Taiwan-USA Workshop on Liquefaction, Taipei, Nov. 1-3, 2004

A satellite conference on Recent Developments in Geotechnical Earthquake Engineering, organized by TC-4 will be held in Osaka on September 10th just before the 16th International Conference.

As part of the 16th International Conference Program, TC-4 has organized a workshop on performance based design