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## PDS 4b: Earthquake related problems SPD 4b: Problèmes liés aux tremblements de terre

A. Hyde  
University of Sheffield, UK

M. Okamura  
Ehime University, Japan

Paper Presentation and Poster Discussion Session (PDS) for “4b: Earthquake Related Problems” was held at 14:00-17:00 on September 15. The presentations were divided into five topics A to E, the logic of which was to follow the same route as a seismic assessment and design.

The groupings were: A In-situ seismic monitoring; B Laboratory and in-situ testing; C Calibration with centrifuge models; D Analysis and numerical models; E Mitigation techniques.

Within these groupings authors gave presentations on varied topics including: zoning and characterization; in-situ seismic monitoring; in situ tests; laboratory liquefaction testing; post liquefaction behaviour; centrifuge models; post liquefaction behaviour; foundation models; centrifuge data; bridge foundation analysis; analysis of piles; modelling of slopes; and slope and foundation mitigation methods.

Authors were restricted to 4 minutes each and at the end of each group there was 5 to 10 minutes of lively discussion.

The following 22 papers were presented at the PDS.

### Group A: In-situ seismic monitoring

- [1] Site characterization through microtremor studies for seismic microzonation of Delhi - *Rao, K.S., Neelima Satyam, D.*
- [2] Comparative study of seismic hazard of Kathmandu valley, Nepal with other seismic prone cities - *Sunuwar, L., Karkee, M.B., Pokharel, G., Lohani, T.N.*
- [3] Behaviour of foundations over surface fault rupture: Analysis of case histories from the Izmit (1999) Earthquake - *Anastasopoulos, I.*
- [4] Influence of the surface layers on site effect - *Verdugo, R.*

### Group B: Laboratory element testing

- [5] Geotechnical properties of liquefied volcanic soil ground by 2003 Tokachi-Oki Earthquake - *Yamashita, S., Ito, Y., Hori, T., Suzuki, T., Murata, Y.*
- [6] Sand liquefiability assessment by Flat Dilatometer Test (DMT) - *Monaco, P., Marchetti, S., Totani, G., Calabrese, M.*
- [7] Assessment of liquefaction potential for a silty sand in Central Western Taiwan - *Huang, A.B., Huang, Y.T., Ho, F.J.*
- [8] Load path and loading velocity as potential condition indicator for liquefaction of silty soils - *Laue, J., Buchheister, J.*
- [9] The influence of earth temperature on dynamic characteristics of frozen soil and the parameters of ground motion at the sites of permafrost on the Qinghai-Tibetan Plateau - *Wang, L., Wu, Z., Zhang, D., Zhang, L.*

- [10] Effects of irregular dynamic loads on soil liquefaction - *Kim, S.I., Park, K.B., Park, S.Y., Hwang, S.J., Lee, J.H., Choi, J.S.*
- [11] Post liquefaction characteristics of low plasticity silt - *Hyde, A.F.L., Higuchi, T.*
- [12] Deformation characteristics of sandy soils subjected to cyclic loads - *Sitharam, T.G., Ravishankar, B.V., Govinda Raju, L.*

### Group C: Calibration with centrifuge models

- [13] Liquefaction potential of horizontal layers with successive earthquakes - *Teymur, B., Madabhushi, S.P.G.*
- [14] Development, effects and mitigation of earthquake-induced liquefaction: a comprehensive study based on dynamic centrifuge modelling - *Coelho, P.A.L.F., Haigh, S.K., Madabhushi, S.P.G.*
- [15] Development of a sampler designed for laminar box and its application to dynamic centrifuge modeling of footing settlement due to liquefaction - *Fujiwara, T., Horikoshi, K., Sakai, K.*

### Group D: Analysis and numerical models

- [16] On the prediction of dynamic behaviour using numerical and physical modelling - *Haigh, S., Coelho, P., Madabhushi, G.*
- [17] Risk evaluation of existing piled foundation in liquefiable soils - *Bhattacharya, G., Bhattacharya, S., Madabhushi, G.*
- [18] Effective stress back-analysis of past earthquake ground motions at Paleoliquefaction Sites - *Luna, R., Jaldi, H.*

### Group E: Mitigation techniques

- [19] Effects of three dimensional response of dikes on their local failures during an earthquake - *Kano, S., Sasaki, Y., Hata, Y.*
- [20] Stability of loose CDG fill slopes subjected to uni-axial and bi-axial earthquakes in a centrifuge - *Van Laak, P.A., Ng, C.W.W.*
- [21] Numerical modeling of confinement walls as liquefaction countermeasure - *Lopez-Caballero, F., Modaressi, A.*
- [22] New liquefaction countermeasure based on pore water replacement - *Yamazaki, H., Hayashi, K., Zen, K.*