



Malaysian Geotechnical Society

Webinar – Talk On “Geotechnical Disasters Due to Typhoon and Physical Modeling of Slope Instability”

By Professor Hoe I. Ling

23rd February 2022 (Wednesday) 5.00 p.m. to 7.00 p.m.

BEM Approved CPD Hours: 2 Ref. No.: IEM22/PP/077/T(w)
PEB PDU: 2

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Synopsis

This presentation is consisted of three parts:

1. The results of geotechnical reconnaissance due to 2009 Typhoon Morakot in Taiwan. Several major types of geotechnical failures will be highlighted.
2. The application of geotechnical centrifuge in modeling slope instability. The study on steep slopes (60 to 90 degrees) will be illustrated using moist Nevada sand and its mixtures with different percentages of fines. Slope failure was generated by increasing the gravity. A video camera was used observe failure and movement of the soil mass. The slope at failure was cut to obtain the configurations of slip surface. The results were used to back calculate the strength parameters assuming a circular mechanism to examine the validity of centrifuge modeling. The study was then extended to model rainfall-induced slope failures.
3. A case history of well documented rainfall-induced landslide (H= 29 m) in Japan was simulated in the centrifuge. The precipitation was applied in increments to the slope surface until it exceeded that of the field measurements. The procedures of simulation will be presented. The instability will be examined using an infinite slope analysis and the mechanism of rainfall-induced failure will be discussed. A loss in apparent cohesion as well as an increase in pore pressure due to infiltration were responsible for the slope instability.

About The Speaker

Dr. Hoe I. Ling is a Professor of Geotechnical Engineering at Columbia University. He obtained his bachelor's degree from Kyoto University, and his master's and doctoral degrees from the University of Tokyo. He was previously a faculty member at the University of Delaware (1994-1998) and a Visiting Faculty at Harvard (Spring, 2006). His major fields of research include geosynthetic-reinforced soil structures, soil constitutive modeling, geotechnical earthquake engineering, numerical and centrifuge modeling.



Dr. Ling received the Career Award from the National Science Foundation in 2001. He was a recipient of the IGS Award (given every 4 years) from the International Geosynthetics Society in 2014. Dr. Ling has also been conferred several international honories: Honorary Professorship from Shijiazhuang Railway Institute (China) in 2014, University Honorary Medal (2015) and Kultegin Medal (2018) from Eurasian National University (Kazakhstan). Dr. Ling is the Editor-In-Chief for Transportation Infrastructure Geotechnology and an Associate Editor for the ASCE Journal of Geotechnical and Geoenvironmental Engineering.

Registration Fee:

MGS / IEM / GeoSS / CTGS Members: **FREE**
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