



GEOTECHNICAL SEMINAR

JOINTLY ORGANIZED BETWEEN
GEOTECHNICAL SOCIETY OF SINGAPORE (GEOSS)
& CENTRE FOR SOFT GROUND ENGINEERING



New Geotechnical Approach to Site Investigation – Underground and Tunnel

22 July 2010, 9am – 5pm

Lecture Theatre 2, National University of Singapore

(PDU pending approval)

***** Admission is free *****

Refreshments and lunch will be provided.

Due to limited seats, please confirm your attendance by 16 July 2010 to: pacreg@nus.edu.sg

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This enlightening workshop is designed to provide you with an opportunity: (1) to learn the techniques of Tunnel Maintenance Management in Japan, and (2) to explore the advanced geophysical exploration methods for geotechnical investigation. Dr Nakamura, and Dr Hayashi from OYO Corporation Japan are our main speakers, who are Tunnel and Geophysical Experts with many years of experience in the respective fields.

PROGRAM

By Dr Nakamura

9.00am Tunnel management
• Method used for inspection and rehabilitation in Japan
10.00am Case study
10.45am Break

By Dr Hayashi

11.00am Outline of geophysical exploration methods for geotechnical investigation in Japan.
11.30am Recent advancement of geophysical exploration methods in engineering.
12.00Noon Lunch
1.00pm Example of geophysical exploration methods for site investigations in Japan.
▪ Application of a surface wave method for monitoring a reclaimed land for an airport.
▪ Levee safety assessment using seismic methods and resistivity methods.
▪ Prediction ahead of tunnel faces using seismic methods.
▪ Mapping bedrock depth using passive a surface wave method.
▪ Monitoring soil improvement using active and passive surface-wave methods. Etc.
3.00pm Question and answer
3.00pm Break
3.30pm Field demonstration of active and passive surface wave methods.

MAIN SPEAKERS

Dr. Nakamura has been worked for 15 years as a consulting engineer for planning of asset management, rehabilitation, countermeasure, and reinforcement of tunnels. He has involved numerous projects in Japan as well as abroad in these specialized fields. He has developed methodologies for the prioritization of strategic rehabilitation plans to the national and local governments. The methodology incorporates social and economic factors, financial status and other related information, and apply the techniques he has proposed. Analytic Hierarchy Process (AHP) method, one of the results of his research, can reproduce the judgment of a professional engineer, and by using this method, items, which could not be prioritized by the existing methodologies, can be prioritized. He has received a doctorate from the study on methodologies for prioritization.

Dr Hayashi has worked in the development and research of geophysical techniques for over 20 years. He received BS degree in Earth Science at the Chiba University of Chiba, Japan, in 1990. He received MSc degree in Earth Science in 1999, at the Earth Resources Laboratory of Massachusetts Institute of Technology (MIT), Boston, in the United States, where he spent 2 years. In 2008, he completed his doctoral studies at Kyoto University of Kyoto, Japan, on the development of active and passive surface-wave methods and their application to site investigations, under the guidance of Professor Toshifumi MATSUOKA.

His main research areas are seismic refraction and surface waves, seismic modeling, and travelttime inversion. He is the author of the widely used Seislmager suite of software for refraction and surface wave data processing and analysis. More than 1000 licenses of Seislmager have been sold all over the world. He is a member of SEG, SSA, EEGS, SEGJ (Society of Exploration Geophysicists of Japan), JGS (Japanese Geotechnical Society), AIJ (Architectural Institute of Japan), SSJ (Seismological Society of Japan), JAEE (Japan Association for Earthquake Engineering). In 2006, he received a SEGJ award for the achievement of the development of the surface-wave methods.