

学术报告

Application of In-Situ Seismic Waves for Geotechnical Site Characterization

Dr. Taeseo Ku & Dr. Yannick NG
Department of Civil & Environmental Engrg.
National University of Singapore

时间：2018年5月31日（周四）上午10:00

地点：岩土楼203

联系人：顾晓强 博士



报告摘要(Abstract): Geotechnical site characterization is considered as a crucial step for every geotechnical project throughout the design and construction phase. In this seminar, some recent applications for advanced seismic wave-based geo-characterization are introduced: (1) A new exploratory procedure for collecting continuous shear wave velocity (V_S) measurements via cone penetration testing using a special autoseis source is presented whereby wavelets can be generated and recorded every 1 to 10 s. The continuous-interval seismic piezocone test offers a fast, productive, and reliable means to expedite the collection of downhole V_S profiles, as well as additional CPT readings with depth. (2) Underground mapping via non-invasive geophysical methods in Singapore is briefly presented. This study used the passive MASW techniques to determine V_S profiles of residual soils, Singapore. Then, the feasibility of investigating spatial variations in bedrock depth is examined. (3) The application of seismic cross-hole tomography for site investigation is advantageous as it can be used to supplement traditional methods for effective site characterization. A recent case study on a reclaimed land in Singapore will be introduced.

报告人简介(Bio.): Dr. Ku is currently an assistant professor in the Department of Civil and Environmental Engineering at the National University of Singapore (NUS). Prior to joining NUS, Dr Ku was a postdoctoral research fellow at Georgia Institute of Technology where he received his PhD degree. He was a member of GT in-situ testing group in GeoSystems Division and worked on projects for the US Department of Energy and ConeTec Investigations, Inc. He is currently a nominated member for TC 101 (Laboratory Stress Strength Testing of Geomaterials) and TC 102 (Ground Property Characterization from In-Situ Tests), ISSMGE. His research interests are on the related areas of in-situ geotechnics and geophysical site investigations.

Dr Yannick Ng obtained his Bachelor degree (Civil Engrg.) and PhD (Geotechnical Engrg.) at the National University of Singapore. During his PhD, he worked on the constitutive behavior of cement-treated Singapore marine clay reinforced with fibres. He is currently undertaking a post-doctoral fellowship at NUS where his current work explores the use of geophysical techniques for geotechnical site investigation. His main focus is to use seismic waves to assess the uniformity of ground improvement.