



# 海岸和近海工程国家重点实验室 学术讲堂

题目：岩土大数据之价值——岩土参数评估  
Value of geotechnical BIG DATA – soil/rock property estimation

报告人：卿建业 教授

时间：2021年12月10日 15:30-16:30

地点：腾讯会议房间号：681 7974 9019



## 内容简介：

卿建业，现任台湾大学杰出教授，毕业于台湾大学和美国加州大学伯克利分校，从事学术研究与教学工作20年。研究领域包括岩土工程风险评估与可靠度设计、岩土特性随机场模型以及场地勘察数据驱动方法，发表SCI论文100余篇，出版学术专著1部。相关研究成果被国际标准ISO 2394提及，为岩土工程不确定性评估、分析与决策提供科学依据，并推动岩土工程数字化转型。2009年获吴大猷奖章、2011与2014年获杰出研究奖。担任国际期刊Georisk执行主编、Canadian Geotechnical Journal副主编，Structural Safety编委，国际土力学与岩土工程学会(ISSMGE)TC304“工程风险评估与管理”技术委员会主席、国际岩土工程安全协会(GEOSNet)主席等。

Abstract: Site-specificity is a unique feature in geotechnical engineering. Site investigation data obtained from one site cannot be directly used for another site. However, it is not uncommon that non-site-specific data are used to support site-specific decision-making. For instance, engineers routinely adopt transformation models to estimate design soil/rock parameters, and most transformation models are calibrated by non-site-specific data. It is quite extreme and unrealistic to ban such models. In contrast, the success of such transformation models indicates that non-site-specific data may have certain values for site-specific decision-making. As we enter the era of BIG DATA, it is timely for geotechnical engineering people to ponder the value of non-site-specific databases. Computer science people have been very successful in exploiting the value in non-person-specific or non-case-specific databases (BIG DATA). It is natural for geotechnical engineering people to ask whether we can also exploit some value from non-site-specific databases. This is the main focus of this talk. The answer is YES. The talk will first introduce some existing BIG DATA in geotechnical engineering. Some are soil/rock property databases, and some are load-test databases. Then, the talk will introduce some advanced methods developed by the author that can extract useful knowledge from BIG DATA to facilitate site-specific decision-making. Without BIG DATA and the advanced methods, such site-specific decision-making was very challenging or even infeasible, but sensible decision-making is now possible with the aid of BIG DATA and advanced methods. The determination of design soil/rock parameters for foundation design is adopted as examples for illustration.