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SHANGHAI JIAO TONG UNIVERSITY



船舶海洋与建筑工程学院
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To See a World in a Grain of Sand: A Geotechnical Researcher's Perspective

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◆ 报告人简介



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杨峻，香港大学教授，香港力学学会理事长，中国力学学会特邀理事，美国土木工程师学会（ASCE）香港分会前主席。拥有浙江大学土木工程学士学位、岩土工程博士学位以及日本京都大学地震工程博士学位。研究涉及岩土工程、地震工程及交叉领域，在国际知名学术刊物发表论文 130 余篇。近期代表性工作包括 2015 年发表于 JPMPS 的有关颗粒材料临界状态与颗粒形状的论文，为该刊年度（179 篇）论文中两篇高被引论文之一；2012 年发表于 GÉOTECHNIQUE 的有关含细颗粒砂土液化的论文为该刊年度（110 篇）论文中两篇高被引论文之一；2012 年发表于 ASCE-JGGE 有关管桩的力学分析及设计方法的论文被美国联邦政府及州政府的相关设计指引所引用。科睿唯安（Clarivate）将其列为世界前 1% 学者，在斯坦福大学全球前 2% 科学家终身及年度影响力榜单均处于前列。学术荣誉包括德国洪堡学者基金、日本学术振兴会卓越学者基金、国家自然科学基金委海外与港澳学者合作基金、教育部自然科学奖一等奖、浙江大学曾国熙讲座、香港力学学会杰出学人讲座、香港大学杰出研究著作奖等。获选为美国土木工程师学会、英国土木工程师学会以及香港工程师学会 FELLOW。

◆ 报告摘要

Many large earth structures (e.g. slopes, dams, and artificial islands) are made up of sand or sandy soil. The stability of these structures is a major concern of the general public as well as the professional. The bitter memories of the deadly slope failures in many places around the world including China remind us of the importance of proper stability evaluation. The difficulty in predicting the mechanical behavior of sand and sandy soil mainly comes from the granular nature of these materials. A sand or sandy soil is an assembly of numerous small grains of varying size, shape and mineral composition. It can exist over a spectrum of states that corresponds to a variety of responses, ranging from fluid-like flow to solid-like strain hardening. The groundwater brings additional difficulty and uncertainty. This talk will present some results and findings yielded from our long-term research endeavor at HKU, which is aimed to advance scientific understanding of the complex behaviors of granular earth materials and thereby provide better engineering solutions. Focus will be placed on the fascinating roles played by the small constituent particles. The significance of these findings to engineering practice will be open to discussion.