Constitutive Model for Unified Description of Soils and Its Application to Boundary Value Problems

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地点：九龙湖校区土木大楼 318 会议室

报告人简介：

Dr. Feng Zhang is a professor of Nagoya Institute of Technology (NIT, National University Association, Japan) since 2005 and is also a Concurrent Professor of Tongji University since 2006. He got Ph.D. degree from Kyoto University in 1995. He served as the head of Civil Engineering Department of NIT during 2006 to 2008 and the director of Advanced Disaster Prevention Engineering Center of NIT during 2011 to 2014. His main research interests are in constitutive modeling in soil mechanics & rock mechanics, numerical analyses in geotechnical engineering and seismic evaluation of earth structures. He is recipient of the awards including the Best Paper Medal of Soils & Foundations (2002, 2011) and the Best Paper Medal of Japan Society of Civil Engineers (2007).

报告摘要：

In this report, the mechanical behavior of soft soils, was systematically described and modeled with a elastoplastic model proposed by Zhang et al (2007). Without losing the generality of sand, a specific sand called as Toyoura sand, a typical clean sand found in Japan, has been discussed in detail. In the model, the results of conventional triaxial tests of the sand under different loading and drainage conditions are simulated with a fixed set of material parameters. The model only employ eight parameters among which five parameters are the same as those used in Cam-clay model. Once the parameters are determined with the conventional drained triaxial compression tests and undrained triaxial cyclic loading tests, they are fixed to uniquely describe the overall mechanical behaviors of the Toyoura sand, without changing the values of the eight parameters irrespective of what kind of the loadings or the drainage conditions may be. The capability of the model is also verified for soft clay. Applications on different geotechnical engineering problems are also given.

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