

报告题目: 地质力学中解析和半解析方法的若干进展
报告人: 艾智勇
报告人单位: 同济大学土木工程学院地下建筑与工程系, 上海

摘要: 相比于数值方法, 解析与半解析方法具有高效率、高精度的特点, 因此在科学和工程分析和计算中占据着重要的地位。本报告对地质力学中常见的解析和半解析方法近年来的发展做简要介绍。岩土介质在长期的自然沉积过程中, 往往表现出明显的各向异性及层状特性; 同时, 地下水的存在决定在求解地质力学问题时, 需考虑其复杂的流固耦合效应。本报告将分别探讨传递矩阵法、解析层元法、扩展的精细积分法等解析与半解析方法在分析复杂岩土介质在静、动、热等荷载作用下响应的应用。

Several Developments of Analytical and Semi-analytical Methods in Geomechanics

AI Zhi Yong

Department of Geotechnical Engineering, College of Civil Engineering, Tongji University,
Shanghai, P R China

Abstract: Compared with numerical methods, analytical and semi-analytical methods have the characteristics of higher efficiency and precision, which play an important role in scientific and engineering analyses. This talk briefly introduces the developments of common analytical and semi-analytical methods in recent years. In the long-term natural deposition process, geotechnical media often exhibit obvious anisotropy and stratification; meanwhile, the existence of groundwater leads to a complex fluid-solid coupling effect, which needs to be considered when solving geomechanics problems. This talk discusses the applications of the transfer matrix method, the analytical layer-element method, the extended precise integration method and so on, in the analysis of the response of complex geotechnical media under static, dynamic and thermal loads.