同济大学学报自然科学版

非线性温差作用下混凝土结构的温度应力

Thermal Stress of Concrete Structure Subjected to Non-linear Tem

投稿时间：2009-4-13　最后修改时间：2010-5-24

DOI:10.3969/j.issn.0253-374x.2010.07.008　　稿件编号:0253-374X(2010)07-0986-05

中文关键词:钢筋混凝土结构　温度应力　非线性温差　开裂

英文关键词:reinforced concrete structure　thermal stress　non-linear temperature variation　crack

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中文摘要

为探讨非线性温度梯度作用下混凝土结构温度应力问题，基于松弛法并结合杆件截面分析的网格法，借助Ansys软件二次开发自结构的分析方法.针对上海铁路南站的温度应力，现场量测了环形框架梁中的温度场分布，根据实测结果,提出温度梯度计算的简化公日照辐射温度对混凝土结构有显著影响.

英文摘要

For investigating the thermal stresses in reinforced concrete structures under the non-linear temperature grad was presented with the aid of the user-programmable features of ANSYS based on the relaxation-method and the gird-me cracking were also taken into account.In order to study the thermal stresses of the Shanghai south railway station,t were measured on site.A simplified formula was proposed to calculate the temperature gradient based on the surveyed analyze the thermal effect of the main structure.The analytical results show that the temperature load due to solar concrete structures.