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【标题】基于张北系列光伏发电项目的季节性冻土区黏性土冻胀性判别方法的探讨

[Title] DISCUSSION ON FROST HEAVING DISCRIMINATION METHOD OF COHESIVE SOIL IN SEASONALLY FROZEN SOIL AREA BASED ON ZHANGBEI SERIES PHOTOVOLTAIC POWER GENERATION PROJECTS

【摘要】本文由对张北某光伏项目的光伏支架微型短桩的监测结果显示冻拔力对微型短桩的影响较大切入,引起岩土工程师的重视。通过钻探、取土、试验、监测等手段,比较 经验法(规范查表法)、试验法(室内冻胀率试验法)和监测法(原位平均冻胀量监测法)在判断黏性土的冻胀性方面的异同。通过比较,得出试验法和监测法结果趋同,较为 可靠,而经验法由于受制于含水率和地下水位的特殊界定往往不能采信。同时对黏性土的冻胀率和其他物理指标进行线性相关程度的分析得出,没有物理指标与冻胀率存在明显 的线性相关性,反映出黏性土冻胀机理的复杂,反证了前人研究结论的纷繁复杂。

[Abstract] In this paper, the monitoring results of the photovoltaic support micro short pile of a photovoltaic project in Zhangbei show that the freeze-thaw pull-out force has a great impact on the micro short pile, which should attract the attention of geotechnical engineers. Through drilling, soil sampling, testing, monitoring and other means, the similarities and differences of experience method (standard look-up table method), test method (indoor frost heave rate test method) and monitoring method (in-situ average frost heave monitoring method) in judging the frost heave of cohesive soil are compared. Through comparison, it is concluded that the results of the test method and the monitoring method are similar and more reliable, while the empirical method is often not acceptable due to the special definition of water content and groundwater level. At the same time, the linear correlation between the frost heave rate of cohesive soil and other polysical indicators is analyzed. It is concluded that there is no obvious linear correlation between physical indicators and frost heave rate, which reflects the complexity of the frost heave mechanism of cohesive soil, and contradicts the complexity of previous research conclusions.

【关键词】张北;季节冻土;黏性土;冻胀率;冻胀性

[Keywords] Zhangbei; seasonal frozen soil; cohesive soil; frost heave rate; frost heaving

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