论文

基于模糊相似优先比的湿陷性黄土强夯有效加固深度预测范例推理研究

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摘要：

在大量已有湿陷性黄土地区强夯资料的基础上，采用频数统计的方法，根据变权的概念确定权重，从而构建了一个基于模糊相似优先比的湿陷性黄土强夯有效加固深度预测范例推理模型。该模型是将已有强夯实例作为源范例，将待分析实例作为目标范例，选取相应的评价指标作为模糊因子，通过源范例与目标范例之间模糊因子的相似度计算，得到目标范例与源范例之间的相似性序列，找到与强夯有效加固深度目标范例最相似的源范例，实现有效加固深度的预测。实例分析表明，有效加固深度预测值与实测值误差在10%以内，预测精度较高，具有一定的推广价值。

关键词： 模糊相似优先比, 湿陷性黄土, 强夯, 有效加固深度, 范例推理

CASE-BASED REASONING AND FUZZY ANALOGY PREFERRED RATIO FOR EFFECTIVE DEPTH OF COLLAPSIBLE LOESS |TREATED WITH DYNAMIC CONSOLIDATION

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Abstract:

This paper is based on lots of dynamic consolidation data in collapsible loess area. It uses the method of frequency statistics to determine factor weights according to the concept of variable weight. It sets up a case-based reasoning model in association with fuzzy analogy preferred ratio for predicting the effective depth of collapsible loess treated with dynamic consolidation. Examples of dynamic consolidation are taken as base cases, while examples that will be analyzed are taken as target cases in this model. Corresponding evaluation index is selected as the fuzzy factor. The similarity of fuzzy factors between base cases and target cases is calculated. The similar series are determined. The most similar base case to target case is found out in terms of the effective reinforced depth. Finally, the effective reinforced depth of dynamic consolidation can be predicted. It is shown from examples that the differences between the predicted and measured values are within 10%. Therefore, this is an effective method with high prediction precision and worth to be used.

Keywords: Fuzzy preferred ratio, Collapsible loess, Dynamic consolidation, Effective reinforced depth, Case-based reasoning

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