灰色－神经网络模型在滑坡变形预测中的应用

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摘要　　根据滑坡位移时间序列的单调增长的特殊性和非线性，运用响应成分模型将滑坡位移量分解成具有确定性的趋势项和具有不确定性的随机项，建立灰色－神经网络模型对趋势项和随机项进行预测。将该模型应用于基于实测位移资料的茅坪滑坡变形短期预测，证明该模型的有效性及可行性。

APPLICATION OF GREY-NEURAL NETWORK MODEL TO LANDSLIDE DEFORMATION PREDICTION

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Abstract

According to the monotonously increasing characteristics and the nonlinear characteristics of landslide displacement time series，the displacement of landslide is decomposed into trend item and random item based on the responding composition model. The trend and random items of displacement time series are predicted by grey-neural network model；and the implementation process of grey-neural network model is discussed. As an example，the grey-neural network model is applied to the prediction of the short-term displacement of Maoping landslide based on the in-situ displacement data. The reasonable result shows the validity and feasibility of the grey-neural network model for landslide displacement prediction.