

應用自組性演算法進行濁度預報之可行性研究

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摘 要 本研究以 GMDH (group method of data handling) 理論為基本架構，利用輸入~輸出之觀測資料自行推演組合，建立濁度預測模式進行攔河堰取水口之濁度預測，並以遞迴之 GMDH 架構修正模式，使模式具時變性而能自我調整，以達長期觀測、精確預測的效果。研究區域選定旗山溪甲仙攔河堰及其上游每日之水文資料(2000年5月~2003年12月雨量、流量及濁度)，據模式測試結果顯示，絕大部分預測值皆位於90%信賴區間內(50 NTU)，顯示自組性網路演算法為架構建立之「濁度預測模式」有良好之實用性，亦可適用於最佳引水時機策略分析之參考。

關鍵詞：自組性演算法、濁度預報、南化水庫、甲仙攔河堰、越域引水。

Turbidity Forecasting Using the Self-Organization Algorithm Model

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ABSTRACT This research use the GMDH algorithm of the self-organization network to build up the turbidity predicting model with the simply input/output observation daily hydrology(rainfall, discharge and turbidity) data of Chia-Shian Weir and its upper stream from May of 2000 to Dec. of 2003. This GMDH turbidity prediction model has a regressive mode where the system can assess the estimate error if the threshold exceeded and then self-adjust the original model by updating the field input data. This makes the model able to achieve a long period and accurate estimation. Model test results show most estimate values are within the 90% confidence interval (50 NTU), indicating this GMDH model is useful for turbidity prediction and critical inflow diverting operation consulting.

Key Words: GMDH, Turbidity Forecast, Nanhua Reservoir, Chiahsien Weir, Over-Basin Diversion.

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