

MATH COLLOQUIUM SERIES

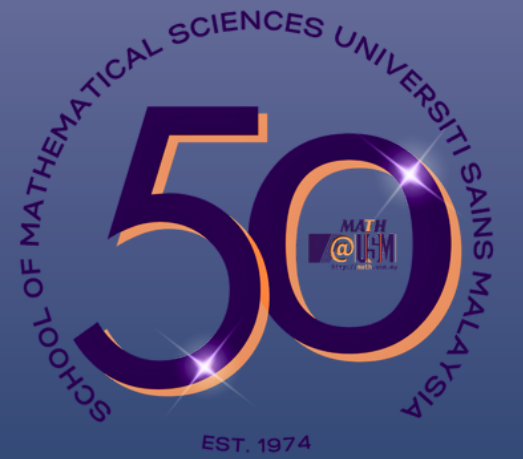


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MODIFIED GROUP METHOD OF DATA HANDLING

This study introduces an innovative model, called the Modified Group Method of Data Handling (MGMDH), which integrates Principal Component Analysis (PCA) with the Group Method of Data Handling (GMDH) to predict flood quantiles in ungauged catchments. By using PCA, the complexity of the GMDH model is significantly reduced. The MGMDH model includes four types of transfer functions: polynomial, sigmoid, radial basis function, and hyperbolic tangent sigmoid. Ungauged catchments, which lack sufficient hydrological data, often face challenges due to unavailable or inactive hydrometric stations. To evaluate the effectiveness of the MGMDH model, data from seventy gauged catchments across Peninsular Malaysia were used. The Jackknife procedure was employed to simulate ungauged sites and assess model performance. A comparative analysis was conducted between the MGMDH model and other established models for ungauged catchments, including Linear Regression (LR), Nonlinear Regression (NLR), and Artificial Neural Network (ANN) models. The results indicate that the MGMDH model outperforms the LR, NLR, GMDH, and ANN models in predicting flood quantiles. Consequently, the MGMDH model emerges as a promising tool for flood quantile prediction in ungauged catchments.



LIVE

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Monday, 10 June 2024

3:00 – 4:00 pm (Malaysia)

<https://bit.ly/MCS10-06-2024>

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