

## Capability of Intelligent Techniques for Friction Factor Simulation in Water Channels

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**Abstract :** This study proposes metamodel approaches as a new intelligent technique for the explicit formulation of friction factors of water conveyance structures. For this purpose, experimental data of a movable bed flume with dune bed form were used. Analyzing the result clears the high capability of metamodel approaches (MNE= 0.05, R= 0.92) as a powerful tool for optimizing and explicit simulation of Manning's roughness coefficients of water conveyance structures compared to other nonlinear approaches.

**Keywords :** intelligent techniques, explicit simulation, roughness coefficient, water conveyance structure

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