Numerical Study of Flow Characteristics with Free Surface Using Turbulence Model

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Abstract

This paper is concerned with a two-dimensional (2D) turbulence model for numerical study of flow characteristics with free surface. The governing equations were integrated and discretized with the finite volume method. The function of volume method was employed to track the moving free surface. The turbulence model was used to predict the characteristics of the 2D vertical plane flow over a steep-sided trench for which the experiment data was available for comparison, and the comparison shows that good agreement was obtained. The proposed model could be used in hydraulic engineering.

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