عنوان مقاله:

Mean Velocity Predictions in Vegetated Flows

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خلاصه مقاله:

Vegetation plays an important role in influencing the hydrodynamic behavior, ecological equilibrium and environmental characteristics of water bodies. Several previous models have been developed, to predict hydraulic conditions in vegetated rivers, but only few are actually used in practice. In This paper six analytic model derived for submerged vegetation are compared and evaluate: Klopstra et al. (۱۹۹۷); Stone and Shen (۲۰۰۲); Van velzen (۲۰۰۳); Baptist et al. (۲۰۰۷); Huthoff et al. (۲۰۰۷) and Yang and Choi (۲۰۱۰). The evaluation of the flow formulas is based on the comparison with experimental data from literature using the criteria of deviation. Most descriptors show a good performance for predicting the mean velocity for rigid vegetation. However, the flow formulas proposed by Klopstra et al. (۱۹۹۷) and Huthoff et al. (۲۰۰۷) show the best fit to experimental data. Only for experiments with law density, these models indicate an underestimation. Velocity predicted for flexible vegetation by the six models is less accurate than the prediction in the case of rigid vegetation.

کلمات کلیدی:

Mean velocity, Vegetation, Analytic models, Measured data, Performance, Underestimation

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