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# Mean Velocity Modeling of Open-Channel Flow with Submerged Vegetation

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**Abstract :** Vegetation affects the mean and turbulent flow structure. It may increase flood risks and sediment transport. Therefore, it is important to develop analytical approaches for the bed shear stress on vegetated bed, to predict resistance caused by vegetation. In the recent years, experimental and numerical models have both been developed to model the effects of submerged vegetation on open-channel flow. In this paper, different analytic models are compared and tested using the criteria of deviation, to explore their capacity for predicting the mean velocity and select the suitable one that will be applied in real case of rivers. The comparison between the measured data in vegetated flume and simulated mean velocities indicated, a good performance, in the case of rigid vegetation, whereas, Huthoff model shows the best agreement with a high coefficient of determination (R2=80%) and the smallest error in the prediction of the average velocities.

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