

## عنوان مقاله:

Prediction of Velocity-Dip-Position at the Central Section of Open Channels using Entropy Theory

## محل انتشار:

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## خلاصه مقاله:

An analytical model to predict the velocity-dip-position at the central section of open channels is presented in this study. Unlike the previous studies where empirical or semi-empirical models were suggested, in this study the model is derived by using entropy theory. Using the principle of maximum entropy, the model for dip-position is derived by maximizing the Shannon entropy function after assuming dimensionless dip-position at the central section as a random variable. No estimation of empirical parameter is required for calculating dip-position from the proposed model. The model is able to predict the location of maximum velocity at the central section of an open channel with any aspect ratio. The developed model of velocity-dip-position is tested with experimental data from twenty-two researchers reported in literature for a wide range of aspect ratio. The model is also compared with other existing empirical models. The present model shows good agreement with the observed data and provides least prediction error compared to other models.

## کلمات کلیدی:

Velocity, dip, phenomenon, Shannon entropy, Maximum entropy, Lagranges multiplier, Open channel turbulent flow

## لینک ثابت مقاله در پایگاه سیویلیکا:

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