

عنوان مقاله:

Open Channel Junction Velocity Prediction by Gene Expression Programming and Regression Methods

محل انتشار:

کنفرانس بین المللی عمران، معماری و زیرساخت های شهری (سال: 1394)

تعداد صفحات اصل مقاله: 10

نویسندگان:

Minoo Sharifipour - M.Sc. Student, Department of Civil Engineering, Razi University, Kermanshah, Iran

Hossein Bonakdari - Associate Professor, Department of Civil Engineering, Razi University, Kermanshah, Iran

Amir Hossein Zaji - Ph.D. Student, Department of Civil Engineering, Razi University, Kermanshah, Iran

خلاصه مقاله:

Open channel junctions are one of the most significant and practical structures in hydraulic engineering. Due to erosion in the contraction zone and sediment deposition in the separation zone, the flow velocity in the junctions is a vital topic in the designing of open channel junctions. This study aims at an accurate prediction of the flow velocity in open channel junctions through Gene Expression Programming (GEP) and regression models, by use of different points of the flow (x^* , y^* , and z^*) and the ratio of the upstream to downstream discharge in the main channel (q^*) as input parameters. The numerical models are compared according to their different statistical errors. It is concluded that the GEP model with Mean Square Error (MSE) value of (0.055) is more accurate in predicting longitudinal velocity in open channel junctions than the regression models with MSE values of 0.103.

کلمات کلیدی:

Open channel junction, Velocity, Gene Expression Programming, regression methods

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/448236>

