عنوان مقاله:

Assessment of some famous empirical equation and artificial intelligent model (MLP, ANFIS) to predicting the side weir discharge coefficient

محل انتشار:

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خلاصه مقاله:

Allocation and removing of excess water from the irrigation and drainage network is one of the most important activities in the management of these networks. Side weir is one of the most common structures for this purpose. Study on the flow Hydraulic characteristics of this structure included two parts, defining the water surface profiles and estimating the discharge coefficient. To estimate the discharge coefficient, many ways as experimental formulas and artificial intelligent models are propose. The empirical formula for simplifying in developing process that assume by the authors, contained significant error so using the AI models are inevitable. In this paper, some of the famous empirical formula and AI models such as Multilayer neural network (MLP) and Adaptive Neuro fuzzy inference system (ANFIS) are assessing with a laboratory experiment. Among the experimental formula, Borghei formula is most accurate (R2=0.83) and the performance of the AI model in Training and testing stage is more suitable (R2=0.96).

کلمات کلیدی:

Side weir Discharge coefficient AI model (ANN, ANFIS) Empirical formula