

## عنوان مقاله:

EXPERIMENTAL STUDY OF THE EFFECT OF SKEWNESS ANGLE OF BRIDGE PIER ON BACKWATER CURVE

## محل انتشار:

کنفرانس بین المللی عمران، معماری و مدیریت توسعه شهری در ایران (سال: 1397)

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## خلاصه مقاله:

The construction of bridge in any water course required to install the pier in the flow path. So, the study of backwater around bridge piers is very important for safe design of piers and other hydraulic structures. Sometimes we need to install the bridge pier at certain angle with flow direction in order to change the flow direction or change the flow characteristics. So, in this study the effect of skewness angle on backwater curve has been studied by using laboratory flume having 12 m length and 0.5 m for each height and width by using semicircle pier. Different five discharge range from 0.0075 m<sup>3</sup>/s to 0.035 m<sup>3</sup>/s with four different skewness angle (00,150, 450, 600). The results of this study show that the degree of skewness angle and the value of discharge have a direct effect on backwater rise. Also, this study show that when used (00,150, 450, 600) skewness angle the percentage increase in backwater was approximately (43,46,117,141) % respectively compare with normal depth in case of maximum flow 0.035 m<sup>3</sup>/s. Also, in this paper the using of Artificial Neural network (ANN) with one hidden layer , two input layer and used log sigmoid as a transfer function to forecast the backwater rise give agreement result with correlation coefficient R equal to 0.98 .and Mean Square Error (MSE) equal to 9\*10<sup>-4</sup>

## کلمات کلیدی:

Skewness angle, Backwater, bridge pier, ANN, Froude number

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/846231>

