

## عنوان مقاله:

Application of Artificial Neural Networks to the Prediction of TBM Penetration Rate in TBM-driven Golab Water Transfer Tunnel

## محل انتشار:

کنفرانس بین المللی عمران، معماری و توسعه پایدار شهری (سال: 1392)

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## خلاصه مقاله:

Rate of penetration of a Tunnel Boring Machine (TBM) in a rock environment is generally a key parameter for the successful accomplishment of a tunneling project. This paper presents the results of a study into the application of an Artificial Neural Network (ANN) technique for modeling the penetration rate of tunnel boring machines. A database, including actual, measured TBM penetration rates, uniaxial compressive strengths of the rock, the point load strength index in the rock mass and, RPM and normal force designation was established. Data collected from Golab water conveyance tunnel. A four-layer ANN was found to be optimum, with an architecture of four neurons in the input layer, 13, 4 neurons in the first, second hidden layers, respectively, and one neuron in the output layer. The correlation coefficient determined for penetration rate predicted by the ANN was 0.91

## کلمات کلیدی:

Neural Networks, TBM, Penetration Rate, Tunnel, Rock Mass Characteristics

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/274694>

