

عنوان مقاله:

Artificial intelligence: a proper approach for prediction of water saturation in hydrocarbon reservoir

محل انتشار:

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خلاصه مقاله:

Water saturation (S_w) is a significant petrophysical parameter usually used for reservoir estimation and production. This parameter is one of the most difficult petrophysical properties to determine and predict. The conventional methods for water saturation determination are core analysis and well test data. These methods are, however, very expensive and time-consuming. One of the comparatively inexpensive and readily available sources of inferring S_w is from well logs. In recent decades, artificial Intelligent (AI) has many applications in the petroleum engineering as well as other areas of research. The aim of this paper is to use two diverse machine learning technology named back-propagation neural network (BPNN) and general regression neural network (GRNN) for predicting the water saturation of four wells in Burgan reservoir, south of Iran. Comparing the obtained results of these two methodologies has shown that BPNN is a faster and precious method than GRNN in prediction of water saturation.

کلمات کلیدی:

porosity, well log data, petrophysics, general regression neural network, back-propagation neural network

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