سیویلیکا - ناشر تخصصی مقالات کنفرانس ها و ژورنال ها گواهی ثبت مقاله در سیویلیکا CIVILICA.com

#### عنوان مقاله:

Unsupervised Fuzzy Logic and Neural Network, Valuable Tools for Interpretation of Well Logs

محل انتشار:

ششمین کنگرہ بین المللی مہندسی شیمی (سال: 1388)

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### خلاصه مقاله:

Petroleum engineers have always been pioneers in utilizing novel and high-tech tools. Artificial neural network and fuzzy logic are among those paradigms which have been rapidly gaining popularity in petroleum modeling and calculations. In this paper, we propose a clustering-based method for predicting shale intervals by means of neural network and fuzzy logic, including two successive clustering steps. Finding shale intervals, if precise, can help a lot in analysis of well logs, formation damage, zonation, layering and so on. Supervised and unsupervised clustering methods are tried on log data gathered from Marun oil field (Iran). Eventually, the predictions of two methods are compared and a very high precision and correspondence with real shale intervals is recorded. Previous attempts on this subject included mostly supervised predictions (core data is necessary); however, in the present work we apply an unsupervised clustering procedure (with no need for core or any data other than raw well logs) and compare its results to the supervised predictions and real shale intervals. Similar methods for prediction of other Lithology types .are then suggested

## کلمات کلیدی:

log data, lithology, neural network, fuzzy logic, clusters

# لینک ثابت مقاله در پایگاه سیویلیکا:



