عنوان مقاله:

Reservoir Petrophysical Properties Modeling Using the Combination of DFN Algorithm with Fractal Dimension of (Complex Sequences(in Case of Khangiran Hydrocarbon Field - Northeast of Iran

محل انتشار:

اولین کنفرانس ژئومکانیک نفت (سال: 1394)

تعداد صفحات اصل مقاله: 9

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خلاصه مقاله:

Production experience with fractured reservoirs has repeatedly shown how understanding and exploiting the fracture connectivity at the reservoir scale is an important factor for optimizing reservoir performance. Discrete fracture network (DFN) models portray fractures and their fracture connectivity very differently from other methods. Modeling of petrophysical properties in hydrocarbon reservoirs are used for a variety of algorithms. One of these new mathematical algorithms is DFN (Discrete Fracture Network). This study focused on part of the hydrocarbon formations of Khangiran field. 52 wells are drilled in this area of which 6 wells for reservoir studies in the northwestern part of this research area. In order to analyze and model the hydrocarbon reservoir porosity and permeability in this range, there are different ways including geostatistical methods, intelligent algorithms, algorithms for discrete fracture network geometry, fractal geometry, and neural network algorithms. Analysis methods and modeling techniques from fractal geometry of these models are appropriate. This technique can be used to calculate fractal dimension of complex sequences based on the box counting method to estimate and calculate porosity and permeability. Increasing the size of the box used to explore the structure of a distribution of points in a background space, the number of filled boxes. This method has been used in the modeling area, the proper description of petrophysical properties of reservoir-prone areas to enter the production phase description as a new ellipsoid based prediction models. The results obtained by this model with geological features, the results of mud loss data and production .results show an appropriate compatibility with lower uncertainty

کلمات کلیدی:

Petrophysical Properties, DFN Algorithm, Complex Sequences, Shorijeh, Khangiran