عنوان مقاله:

Integrated Litho facies Modeling Using Some Geostatistical Methods in Reservoir Modeling

محل انتشار:

دومین همایش علمی مهندسی مخازن هیدروکربوری، علوم و صنایع مرتبط (سال: ۱۳۹۲)

تعداد صفحات اصل مقاله: ۱۰

نویسندگان:

Behnam Mahmoudi - Research Institute of Petroleum Industry (RIPI), Tehran, Iran

Ghafoor Karimi

خلاصه مقاله:

Modeling of discreet parameters such as geological facies, lithology, or rock types, is a very important topic in reservoir characterization and is described in more detail by Dubrule (۱۹۹۸).Geological quantification is a topic that has always raised much interest and debate among geologists. Depending on the depositional environment and using the well data as a constraint, the reservoir geologist can draw sketches of the distribution of sands and shales. Unfortunately, hand-drawn cross-sections are limited in that they do not lead to a ۳D model, and they represent only one possible model among infinity of scenarios matching the wells and compatible with the depositional environment. In the early ۱۹۸۰s, it became clear that geostatistical techniques could help generate such ۳D geo logical scenarios. These scenarios will never be quite as realistic or geologically loaded as those produced by a geologist, yet they present the advantage of being mul tiple and three-dimensional. Today, there are two major classes of techniques available for generating ۳D stochastic models: pixel-based and object-based models. In this study some different aspects of geostatistical modeling is considered. After that the different methods of facies modeling like IK, SIS and object modeling run by PETREL software in the following a real case study. Facies are often important in reservoir modeling because the petrophysical properties of interest are highly correlated with facies type. Knowledge of facies constrains the range of variability in porosity and permeability. More-over, saturation functions depend on the facies even when the distributions of porosity and permeability do not.

کلمات کلیدی:

Integrated Reservoir modeling, Facies Modeling, Kriging, Simulation