



## **CONSTRUCTION OF GEOSTATISTICAL MODEL USING WELL TEST DATA (CASE STUDY OF IRANIAN NATURALLY FRACTURED RESERVOIR)**

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### **Abstract**

Spatial distribution of permeability has been estimated from well test data in one of the naturally fractured Iranian reservoir using geostatistical modeling. First, we collected well test data from 14 different wells of the field and interpreted them using Pansystem software. During interpretation phase, we obtained some geological features of the reservoir in addition to absolute overall permeability. Overall permeability in a naturally fractured reservoir is the total of matrix and fracture permeability. We compared the overall permeability of the field with permeability obtained in core analysis. Obviously, permeability from the core is much lower than those from well test because in the core, the large-scale permeability does not necessarily exist. After well test analysis, we used geostatistical approach to estimate permeability spatial distribution in the field using ordinary Kriging. We constructed an iso-permeability map in order to detect the productive sectors for further development of the field.

The results show that in Asmari reservoir the permeability increases from South-West part of Southern flank toward North-East part of Northern flank in Western culmination.

In Eastern culmination which there is only well no. 2, we cannot have certain estimation of permeability. This model has satisfactory compatibility with other parameters of the reservoir such as porosity, Net to Gross and reservoir performance.

**Keywords and phrases:** geostatistic, variogram, block Kriging, iso-permeability, Well test, naturally fractured reservoir.

