

## **Application of Stochastic Analysis and Modeling Through Integrated Reservoir Characterization in Gonbadli Gas Field (Northeastern Iran)**

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This paper presents an applied workflow results of an integrated from Petrophysical, Geophysical and Reservoir Engineering aspects. The input data were provided for a high resolution Geo-statistical inversion with porosity co-simulation studies of gas saturated, Lower Cretaceous Sandstones of the Kopet-Dagh Basin, on Gonbadli field in North Eastern of Iran.

This study covered part of a project for NIOC Exploration Directorate to deliver an initial deterministic inversion of a 3D- seismic data set which was acquired over the Gonbadli gas field followed by a Geo-statistical inversion along with porosity co-simulation .

Petrophysical data of nine wells were applied in this study. The final result created a three porosity reservoir models in depth, which were tied with the well data and also take advantage of the 3D-Seismic data in this area.

The advantages of this technique (by using RMS & JASON'S softwares) over traditional reservoir modeling is, the high vertical resolution of the well data can be powerfully combined with the high lateral resolution of the seismic data .

By applying of all available data, three scenario, probabilistic, and accurate reservoir models were obtained.

Up-scaling of the 3D property models has been performed and provided an Eclips-ready set of models for flow simulation and risk analysis.

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