

Petroleum System Modeling and Risk Analysis, Cambay Basin, India.

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Exploration is associated with risks and uncertainties, especially due to limited or poor quality data. Understanding the uncertainties on the results is the goal of every explorationist and one of the best ways is to build several equi-probable stochastic models of our predictions.

The aim of this study is to risk the critical geochemical components and arrive at an unbiased understanding of the petroleum system. The study also defines the effects of these uncertainties and finds which particular component will have the highest sensitivity on the simulation result.

The more specific objectives are:

1. Determination of generation potential of the source rock
2. Timing of hydrocarbon generation
3. Migration modeling of the hydrocarbon (if generated) in a 2D cross section along the basin.

The case study has access to only public domain data of Cambay Basin. The exploration stage usually has very limited data and this study is aimed at showing how meager amount of data may also be useful for better understanding of the geological system and thereby leading to better chance of success.

Petromod Suite of software is used for the analysis.

The Cambay Basin is regarded as an important hydrocarbon bearing basin of India. Sedimentary rocks in this petroleum province ranges from Paleocene to Recent and were deposited on a Tertiary rift basin.