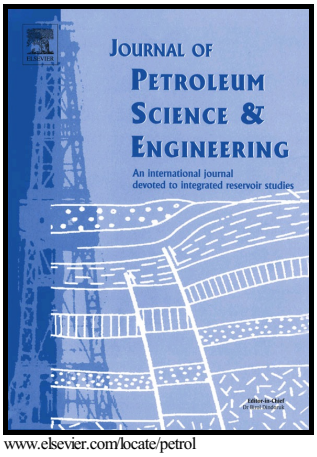

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Abstract

Low oil prices have been a major reason for the reduced investments in oil and gas projects around the world. This study analyzes how oil price uncertainties impact decision making concerning an African oil exploration and production project conducted under the Risk Service Contract (RSC) by incorporating managerial flexibility through the application of real options analysis (ROA). The study uses geometric Brownian motion (GBM) to model prices and the Petrel® and Eclipse® software to calculate the production profile. Managerial flexibility is incorporated through a binomial model. Initially, only a timing option is considered; in a second scenario, a timing option interacts with a scale option. The results advise against developing the oil field when uncertainties are disregarded. The results produced by adding uncertainty due to oil price volatility from a risk perspective and using a Monte Carlo simulation (MCS) indicate that the oil field has little chance of success. However, the results of considering managerial