

THE PROBABILITY PROBLEMS IN THE PROSPECT APPRAISAL

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Prospect evaluators are always concerned of the following two problems associated with a prospect: one is the oil discovery probability, the other is the field size distribution for the prospect. These are the two basic exploration parameters which are necessary for formulating different kinds of exploration strategies.

The exploration estimation parameters are the subjective geological judgement of the analyst; however, by the Bayes' rule, the latest new objective information can be incorporated into the original estimation, therefore, the original subjective judgement can be revised systematically and the revised estimation will be closer to the fact in the future.

This paper will discuss the oil discovery probability of a prospect based on the subjective theory of probability. Then it will show how to use the Bayes' rule in revising the field size distribution, estimated by Monte-Carlo simulation, with a speculative prospect.