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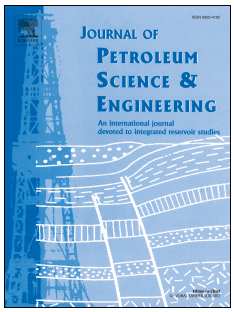

A decision support approach to value flexibility considering uncertainty and future information

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ACCEPTED MANUSCRIPT

A decision support approach to value flexibility considering uncertainty and future information

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Abstract

Flexible strategies have become increasingly important for making strategic decisions under uncertainty conditions, once to consider flexibility in projects to engender the option of making return-maximizing decisions, since uncertainty can be resolved over a project's lifetime. The activities related to reservoir development are inherently associated with decisions making under uncertainty conditions and flexible solutions are very advantageous, allowing the option of making return-maximizing decisions, the uncertainty is resolved over a project's lifetime. One of the technologies that fit in this context are the smart wells, since this technology has the ability to acquire relevant requested information for future decision-making, enabling the generation of a development strategy with future flexibility. However, to value its flexibility if we do not account for uncertainty when performing an optimization, the resulting strategy will have two key shortcomings: it will assign too high value to the smart wells, and it will not take advantage of the ability of the smart wells to adapt and

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