RM30

Risk and Uncertainty in EP - Where Are We?

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SUMMARY

Uncertainty analysis and modelling in EP evaluation is one of the main focus for the oil industry during the last decade and many progress have been made on the subject, although there are still more improvements to come as the problem is far from being trivial.

This key note talk will share with the audience the state of the art we are today with different uncertainty analysis and modelling techniques used by the industry in order to identify and reduce potential risks involved.

Uncertainty analysis is the first and crucial step, aiming at identifying correctly the key uncertainties, their related nature (bias or variance errors) and their impact on the results under consideration. Weak signals from measurements should be scrutinized and analogues should be investigated in case of sparse data or information.

Uncertainty modelling is the final step using either well known deterministic approach or more complex probabilistic ones. The process is closely linked with the geological and reservoir modelling tasks and must comply with the objective which has been set up beforehand. Their applications and limits are frequently subject of debate, as well as the long time it took to complete the whole process, sometimes with hundreds of models to be generated and investigated.

At the end, the communication of the uncertainty results to different parties is not always an easy task, since the probabilistic language is seldom popular among operational staff and especially when the operational needs differ greatly from one group to another.

Big challenges still lay ahead for a more comprehensive approach for uncertainty analysis and modelling with a trend towards larger models of the subsurface and more realistic representation of reservoir heterogeneities.

However, mastering the uncertainties and risks is the sole way for a better exploration and development.

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