

Model Uncertainty

Publieke samenvatting / Public summary

Aanleiding

Data Assimilation is the field that aims to optimally combine information from models and information from data. Both estimates are inevitably prone to uncertainty and a well-weighted combination of estimates can result in a best-estimate computation which serves operators best. Instrumentation uncertainty may be prone to offsets, drift and noise and model-uncertainty can be highly nonlinear and should be treated as such in assimilation techniques. Furthermore, operation of mature assets often shows very dynamic behaviour, due to deposition, unstable flow, top side constraints and routing changes. Data assimilation is required to take the dynamics into account.

Doelstelling

The objective of this project is to apply 'data assimilation' principles of applied mathematics to upstream gas production, in order to reduce uncertainty in computing key performance indicators.

Korte omschrijving

This project will: 1. Choose one field application (to be decided on with participants); 2. Evaluate which methodology is most appropriate; 3. Demonstrate how to apply this method (combine field data and available models into a best-estimate) in a workflow to the selected field application; 4. Quantify the gain in prediction accuracy (of e.g. production rate, LGR or compressor efficiency) against a Base Case, where no uncertainty handling is taken into account; 5. Implement the methodology in an easy-to-use form for use by participants

Projectinformatie / Project information

Projectnummer / Project number

TKITOET2017-05-UG

Subsidiebedrag / Grant amount

€ 58.824,00

Algemene informatie / General information

Penvoerder / Secretariat

TNO

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Resultaat

The project hereby proposed focusses on generating the best estimate of unmeasured or measured variables (states) with high uncertainty, together with their estimated accuracy, based on optimal combination of other measured variables (including their respective measurement accuracy), combined with process models (also including model accuracy).

De data in deze applicatie is afkomstig van de Rijksdienst voor Ondernemend Nederland (RVO) en wordt in samenwerking met de Topsector Energie ontsloten.

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Voor meer informatie over de TSE / Energie-Innovatie regelingen die RVO aanbiedt, ga naar www.rvo.nl/tse.