Vasily Demyanov

Uncertainty and geological realism in inverse modelling of subsurface reservoirs

Prediction modelling of complex natural system is subject to vast uncertainty in model description, definitions and data and solution errors. The non-uniqueness of the inverse problem solution provides a way to assess uncertainty of the predictions. Among many challenges in solving the inverse problem are 1) to maintain the physcially/geologically realistic/interpretable model features, while the model being perturbed in the search for multiple solutions which match the observations ") to consider multiple modelling scenarios, which may not share the same model description or use the available data/interpretation in the same way. Some approaches to tackle the above issues will be shown in the talk using subsurface reservoir examples.

Short biography:
Dr. Vasily Demyanov is a lecturer in geostatistics with Heriot-Watt University (Edinburgh). His research interests include stochastic optimisations, machine learning and Bayesian approach to uncertainty in prediction modelling. Vasily is visiting UNIL (with Mikhail Kanevskiy) for the next month aiming to extend collaboration between UNIL and Heriot-Watt.

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