UNCONVENTIONAL PREDICTIVE WORKFLOW: OPPORTUNITIES IN OPTIMIZATION AND SCALING

Authors: Pierre-Yves Aquilanti[1], Antoine Bertoncello[2], Nommie Kashani[2] & Rob Merrit[2]
[1]TOTAL E&P Research & Technology,
[2]TOTAL E&P USA

Forecasting production of unconventional wells is a challenging task. Predictions have to be generated for thousands possible drilling locations and traditional reservoir simulators are not yet able to capture the complexity of fluid flow and account for the completion characteristics.

However, the drilling intensity of unconventional development generates an immense amount of data. The existence of a large volume of data provides an opportunity to develop predictive analytics workflow that connects geological properties, completion designs and well productivity. The increasing use of analytical models is raising new challenges in terms of computations, data management, computational architectures and machine learning workflows.

During this presentation, we will share our experience on the development and the optimization of a predictive workflow in the context of unconventionals. We will discuss on the challenges of scaling from a workstation to a cluster and present opportunities that such scaling generates.