

Extreme simulation: successful application of parallel VIP in complex reservoir environment

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From the beginning of reservoir simulation the goal has been to rigorously simulate all relevant physics and geology such as results from the models would accurately predict the future. Unfortunately, this has often not been the case. Compromises were required due to limitations of computer hardware, field data and simulator rigor. The introduction of inexpensive commodity parallel computer hardware has significantly increased the power of the tools available to the engineer so that he is now able to address the extreme challenges of simulation: field-wide simulation at the geological model scale and tight coupling of the surface network with the reservoir simulator.

Examples of the successful application of Parallel VIP will be represented: a field-wide simulation of a retrograde condensate field at the scale of the geological model and a multi-reservoir compositional study including the effect of regional surface facilities on production.