441g Process Optimization Using "Local Models" to Linearize Flash Calculations without Losing Accuracy

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Simulation and optimization for a refinery process often involve huge efforts on multi-phase equilibrium calculation. One efficient way to optimize it is to apply a “local model” [1] to linearize flash calculations without losing accuracy.

A state-of-art “local model” had been developed by SimSci-Esscor's thermodynamic team that has been tested by process simulators like Dynsim, which not only meets the performance requirements, but also maintains thermodynamic accuracy throughout the whole process. This presentation covers the major mathematical issues behind this technique.

[1] US Patent #: 60/563,375