Metamodeling Approach to Optimization of Steady-State Flowsheet Simulators: Model Generation

Steady-state flowsheet simulations can be too complex to be amenable to direct optimization. An indirect route involves data collection from the simulation and fitting of less complex surrogates: metamodels, which are more readily optimized. The use of metamodels allows the optimization to proceed while requiring only a small number of solutions to be obtained from the simulation. This paper describes a general methodology for optimization of process simulations via metamodeling. Implementation issues surrounding the data collection and model generation phases of the methodology are identified. Examples of effective techniques are given.