Multipurpose Reservoir Simulator (MPS)

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Abstract

An overview of several ongoing reservoir simulation research projects will be presented. Specifically, the talk will focus on development of a compositional equation of state reservoir simulator that has been under development for the last twenty years. Various modules for simulating different enhanced oil recovery processes have been implemented in the simulator. The simulator is designed to perform accurate and efficient high-resolution simulation of fluid flow in permeable media for large complex problems using desktop computers as well as parallel processing on clusters of PCs. The simulator also contains a module for simulating fluid flow in the wellbores with flow assurance consideration. A dual porosity module and an embedded discrete fracture module for simulating miscible gas injection in naturally fractured reservoirs have also been added. An important aspect of this project is the development of a reservoir simulator capable of modeling a variety of oil recovery processes.