

数学与系统科学研究院

计算数学所学术报告

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报告题目:

Development of A Scalable Thermal Reservoir Simulator on Parallel Computers

邀请人: 谢和虎 研究员

报告时间: 2019 年 1 月 9 日 (周三)

上午 10:00-11:00

报告地点: 科技综合楼三层

311 报告厅

Abstract:

Thermal recovery processes are the main production processes in Canada, due to the high viscosity of heavy oil. Steam is injected into reservoirs to heat the reservoir and the fluids, and to reduce the viscosity of heavy oil. The cost is high compared with conventional production technologies. Therefore, it is important to study the production plans before applying to oil fields. However, the simulation time could be hours, days or even weeks long if the model size is large or the geological model is complex. As we know, the performance of parallel computers is proportional to the number of CPUs. In our work, the parallel computers are employed to accelerate the simulation. As a result, thermal problems can be solved thousands of times faster. In this talk, numerical methods of thermal model and its parallelization are presented. Numerical results show that our results match commercial simulator very well and the simulator has good scalability.

欢迎大家参加！