Ben Bergen

Programming Models and Techniques for Iterative Solvers Using OpenCL

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In this talk, we present a multiphysics advection-diffusion solver that has been implemented using the Open Computing Language (OpenCL), a royalty-free standard for developing cross-platform codes on accelerated and multicore/manycore architectures. During the course of developing this code several useful abstractions and techniques were identified. Additionally, issues of how to incorporate OpenCL into existing distributed-memory programming models using MPI have arisen. We will discuss some of these techniques and possible models for large-scale simulations.