APR05-2005-000726

The SciDAC lattice gauge theory software program

JAMES OSBORN, Boston University

In the past few years many members of the US lattice gauge theory community have joined together to develop software to make writing parallel codes easier and to take full advantage of present and future supercomputer platforms. I will give an overview of the three levels of libraries developed for use in lattice gauge theory calculations. The first level is for communications and basic linear algebra routines. The second provides data parallel operations acting across the lattice. And the third contains full machine optimized versions of major computational kernels.