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Early Performance Evaluation of Lattice QCD on POWER+GPU Cluster

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As supercomputers are shifting from peta-scale to exa-scale, computers with accelerators such as GPUs, MICs and FPGAs have become one of the big trends of supercomputer because of their low energy consumption and high density. Now IBM's POWER processor has quite new power, Nvidia's Tesla GPU brings huge computational capability. It is important for us to understand how this new POWER+GPU environment brings power to the actual applications in the early stage. We implemented Wilson-Dirac kernel and BiCGStab solver using CUDA7.0 on the POWER+GPU cluster and evaluated the performance. We will show the performance results of serial and parallel executions.

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