

CSSM Physics Report

21st ILDG Workshop

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NCI MAS Computing facilities

- Approximately 1% share for Lattice QCD.
- NCI NF Raijin, CPU Cluster.
 - 57,472 cores in 3592 compute nodes.
 - Peak performance of approximately 1.2 PFlops.
- Massive, GPU Cluster, 236 nodes.
 - $148 \times$ nVidia M2070 GPUs
 - $68 \times$ nVidia K20m GPUs
 - $20 \times$ Intel Xeon Phi co-processor
- Avoca, IBM Blue Gene/Q.
 - 65,536 cores.
 - Peak performance of approximately 0.84 PFlops.
- Epic, CPU Cluster, 9600 cores.
- Fornax, GPU Cluster, $96 \times$ Tesla C2050, 1 per node.

Local Computing facilities

Tizard

- eResearchSA, heterogeneous machine.
- CPU Nodes: 2304 cores, performance peak: 24 TFLOPS
- **GTX Nodes:** 48× GTX 580, 4 per node.
- Tesla Nodes: 20× Tesla M2090, 4 per node.

New GPU Cluster

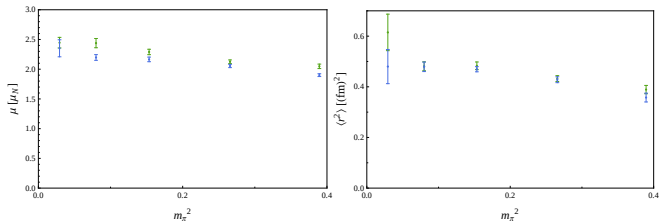
- Dedicated to Lattice QCD.
- **GTX Nodes:** 40× GTX Titan, 4 per node.
- 24 GB GDDR5 memory per node.
- Peak performance of 180 Tflops (SP), 60 Tflops (DP)

PACS-CS Configs

- 2+1 flavor full QCD configurations by PACS-CS are still seeing extensive use.
- Details: <http://www.jldg.org/ildg-data/PACSCSconfig.html>
- These ensembles form the “workbench” for our projects.

Physics Plans

- Hadron structure...



- Visualisations...

