CSSM Physics Report
15th ILDG Workshop

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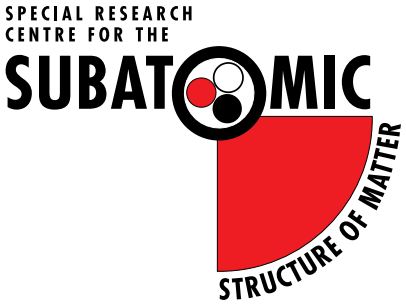

Computing facilities

NCI Vayu

- National computing facility, SUN constellation.
- 11936 Intel Xeon 2.93 GHz - Nehalem series
- 36 Tbytes of main memory.
- Performance Peak: 140 TFlops
- Sustained: 240K SPECFP_rate
- Infiniband interconnect.
- We have applied for 5% share for Lattice QCD.
- Installed in two stages.
- Initial stage has one-eighth final capacity.

Computing facilities

Corvus

- Provided by eResearchSA.
- An SGI Altix XE1300 cluster, with 68 SGI Altix XE310 compute nodes.
- 544 Xeon 2.66 GHz cores in total.
- Theoretical peak of 6 Teraflops.
- Linpack benchmark of 4.5 Teraflops.
- Infiniband interconnect.

ILDG usage

PACS-CS Configs

- 2+1 flavor full QCD configurations by PACS-CS

κ_{ud}	κ_s	$n_{\text{cfg}}(n_{\text{total}})$
0.13700	0.13640	$399(399)$
0.13727	0.13640	$397(400)$
0.13754	0.13640	$449(450)$
0.13754	0.13660	$389(400)$
0.13770	0.13640	$559(800)$
0.13781	0.13640	$198(198)$

ILDG usage

PACS-CS Configs

- Details: http://www.jldg.org/ildg-data/PACSCSconfig.html
- Downloaded from the JLDG (Japan Lattice Data Grid) through the ILDG.
- Six ensembles with pseudoscalar meson masses in the range 702 MeV to 156 MeV.
- Total number of configurations successfully downloaded: 2391
- At 1.2 GB per configuration => 2.9 TB data downloaded.
- Speed: 310 KB/sec per download with six parallel downloads.

ILDG usage

ILDG Resources Used

- QCDml Faceted Navigation
  `http://www.jldg.org/facetnavi/`
- LDG Software
  `http://www-zeuthen.desy.de/ape-cgi-bin/download.cgi?Le`
- ILDG Client Tools Install Guide
  `http://www.usqcd.org/ildg/ildg-client-install.html`
- Local support provided by Shunde Zhang.

FLIC dynamical fermion program

Dynamical FLIC Fermions

- On hold for the moment due to insufficient resources.
- Will be using most of our computer time calculating propagators on PACS-CS configs.
- Will resume in the future...

Propagators?

- Stored as $S(a, b; \alpha, \beta; x, y, z, t)$.