

# Grid and Computers in Germany

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- Organisation: Lattice Forum (LATFOR)



- Supercomputers in Germany
- German HEP Grid activities

<http://www-zeuthen.desy.de/latfor>

coordination at NIC/DESY Zeuthen



- present Supercomputer Resources
  - National Supercomputer Centers:
    - FZ Jülich 10TFlops, IBM Regatta
    - HLRN (Berlin, Hannover) 7TFlops IBM Regatta
    - HLRS (Stuttgart) 1.4TFlops NEC/CRAY
    - LRZ (München) 2TFlops Hitachi
  - fold with efficiency 15%
  - fold with ET contingent 20%  $\Rightarrow$  1 TFlops
  - DESY 3 TFlops
  - University of Bielefeld: Proposal for 5 TFlops
  - University of Wuppertal: cluster with 1024 Opteron processors,
  - Smaller clusters at HU, Münster, DESY
  - small QCDOC at Regensburg

## Developing Future Infrastructure: apeNEXT

❑ **Planned:** → 1+1 racks at INFN+DESY = 1.6 Tflops

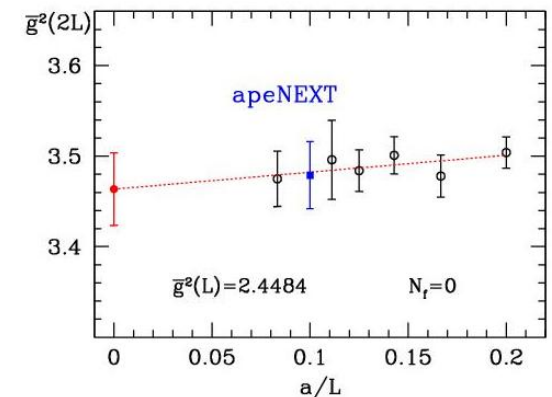
❑ **Status :**

- 10 PBs (160 processors) being assembled
- First physics codes running as hardware tests
- 1000 more processors expected in a few weeks
- Approval of 10 TFlops at INFN
- Order of 3 TFlops at DESY



❑ **Aims:**

- Physics production on 1.6 TFlops prototype
  - ➔ Stable hardware
  - ➔ Efficient+stable software



## D-Grid, HEP-Grid, Lattice Data Grid

- D-Grid: German Grid of several (5) Communities
- High Energy Physics, HEP Grid → mainly experimental physics
- proposal submitted (LDG participates with *semantic data access*)
  - budget for community grids and one integration project
  - LatFor Data Grid
    - initial partner labs: NIC, DESY, FZ-Jülich, ZIB
    - plan of having a prototyp Grid running at German-Japanese workshop, November 2004 → successful!
  - Middleware
    - LCG based, d-Cache system, development of DESY/FermiLab
    - works for DESY experiments, adapt to lattice requirements
    - Metadata and Replica catalogues, Storage Resource Manager

## Physics Plans

|                                  |                              |   |
|----------------------------------|------------------------------|---|
| <b>SESAM</b>                     | Action:<br>Links:<br>Policy: | $N_f = 2$ Wilson, Wilson plaquette<br>US<br>open                          |
| <b>QCDSF</b>                     | Action:<br>Links:<br>Policy: | $N_f = 2$ NP-Clover, Wilson plaquette<br>Germany, UK, Japan<br>restricted |
| $\chi$ <b>LF</b>                 | Action:<br>Links:<br>Policy: | $N_f = 2$ tmQCD, Wilson plaq. + DBW2<br>Germany, ...<br>open (*)          |
| <b>DFG-FG,<br/>ZAM-Wuppertal</b> | Action:<br>Links:<br>Policy: | $N_f = 2$ Overlap, TI-LW?<br>Germany, ...<br>restricted                   |

(\*) Acknowledgment in paper, draft paper in advance