# US Lattice QCD Collaboration Data Grid Activities

www.usqcd.org

www.lqcd.org/ildg

Lattice QCD collaborations world-wide have agreed to standardize methods for interchanging precious lattice QCD data files.

International Lattice QCD Data Grid

www.lqcd.org/ildg

Members represent major collaborations:

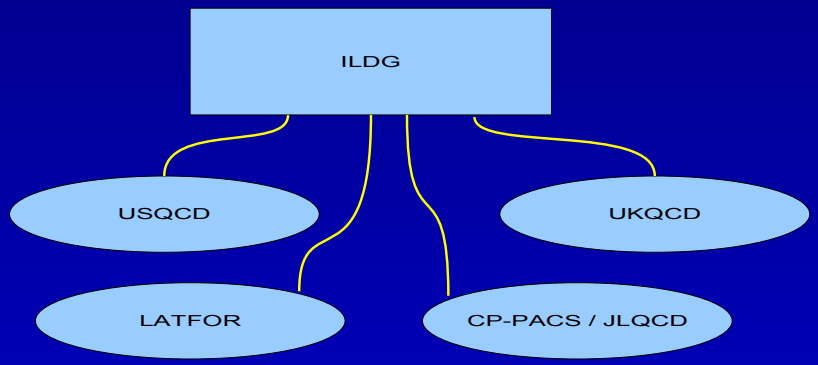
- Australia (Adelaide)
- France, Germany and Italy (LATFOR)
- Japan (CP-PACS and JLQCD)
- United Kingdom (UKQCD)
- USA (USQCD)

# Lattice data are already available

- NERSC archive qcd.nersc.gov/
- LATFOR portal www-zeuthen.desy.de/latfor/ldg/
- CP-PACS/JLQCD portal www.lqa.ccs.tsukuba.ac.jp/

The NERSC archive data represents 10's of Tflop·years of supercomputing effort.

# The ILDG is a grid of grids




Member collaborations maintain their own metadata catalogs, replica catalogs and file transfer tools.

ILDG transactions are forwarded to the collaboration grids.

# USQCD gridware status

- USQCD software supports ILDG file format
  www.usqcd.org/usqcd-software
- Storage Resource Manager (SRM) data transfers
  - Fermilab dcache disk/tape archive
  - Jlab tape archive
- Metadata catalog based on native XML database to be developed at Fermilab.
- Replica catalog to be developed at Jlab.

# File transfer tests

On-demand provisioning of high-performance network pathways for scientific data flows.
DOE FNAL CalTech www.lambdastation.org/

Test transfers between the DESY physics laboratory in Hamburg Germany and Fermilab in the U.S.

- Route: Fermilab ↔ ESNet ↔ DANTE ↔ DFN ↔ DESY
- Memory-to-memory (iperf) 55 MB/sec peak.
- 24 hr average disk-to-disk 19 MB/sec (1.6 TB/day).
- Rate well below expectations for this network route.
- Rate exceeds ILDG requirements.