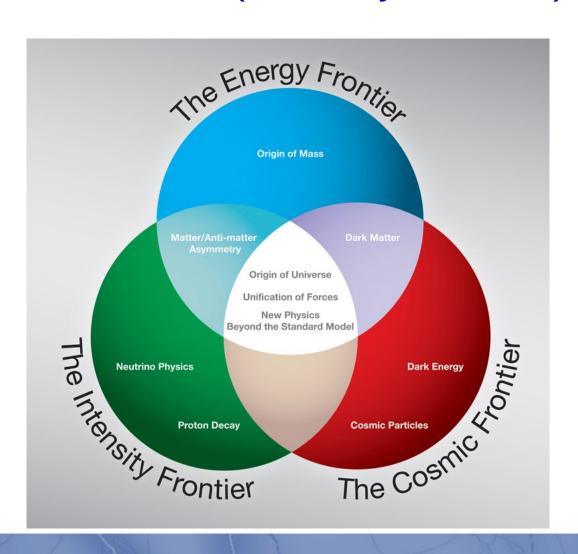
Fermilab VO (Intensity Frontier)



Fermilab VO presentation

Steven Timm OSG VO Forum 7/14/2011

Fermilab VO projects

- All Fermilab employees and users part of Fermilab VO
- Only certain subgroups exported to OSG
- Intensity frontier experiments
 - Running or ran recently: MINOS, MiniBooNE, MINERvA, NOvA, ArgoNeuT, MIPP
 - Building/Planning: MicroBooNE, Mu2e, LBNE (soon to be own VO), Muon g-2
- Accelerator and beamline simulation
 - Project X, Muon accelerator program, Numi, muon collider detector/physics
- Theoretical simulation (PATRIOT)
- Cosmic frontier—Cryogenic Dark Matter Search

Fermilab VO OSG usage

- All jobs on FermiGrid are OSG jobs.
- 32M wall hours used by Fermilab VO since OSG started
- Anticipated use of 10M wall hours this year, grow to 13M wall hours next year.
- Heavily dependent on glideinWMS
- Dependent on successful completion of VOMRS->VOMS transition
- Currently run mostly on FermiGrid itself.
- Active research ongoing to allow analysis at remote sites, main hurdles are finding substitutes for bluearc NFS server and good way to distribute code.

Intensity Frontier Hardware Architecture

Developer/ **End User** Administrator **Debugger** "ART","GAUDI","LOON" Framework "jobsub" Job Submission **Analysis Tools ROOT Application Wrapping & Staging** ups/upd Monitoring and Reporting CAFMon, MCAS **Applications** Workload Management CONDOR, Glidein-WMS Workflow Management DAGMAN SRM Storage Management Data Management - Event and SAM, Conditions/Calibrations NuConDB, DBI, others **MIddleware** Linux, VMWare,XEN GPCF, FermiGrid (includes Compute BlueArc, dCache, Disk Caches CMS, Run II resources) (investigating Hadoop, Local Univ. Clusters Tape Storage LUSTRE) Persistent VMs Remote Resources via OSG Enstore/STK

Physical Infrastructure

Intensity Frontier Hardware Architecture Nearline Offline & FermiGrid

Grid at large Online Compute Storage **Conditions GPSN Database Services** CONDOR WMSglidein Conditions Data File & Far **Gate** DB **Detector** Metadata (Optional) way Control Catalog Room **GPVM** Inter active Login **OSG** Pool Central **Target** Nearline **Sites Processing** Disk **GPWN Monitor** Local **Storage Batch Pool** Beam Info **dCache Gate** Near monitoring **Fermi Detector** way Grid **Enstore** Cluster Tape **Archive**

Mu2E High-statistics Background Simulation

