Status of CEDAR Projects

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HERA-LHC/MCnet Meeting

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CEDAR Goals

- Provide open source validation tools for MC generators, in time for LHC data

CEDAR resource status

- Initial resource from UK eScience program (PPARC) with support from UCL & Durham IPPP.
  - PPARC grant ended April 2008
  - Support from UCL, IPPP continues
  - Additional support from MCnet started 2007 ago and continues

CEDAR Projects

- HepForge
  - Development platform for CEDAR projects (and others)
- HEPDATA
  - Existing database of HEP measurements
- Rivet
  - Library (plus generator interfaces) of analyses for comparison with data
  - Replacement for HZTool
- JetWeb
  - Database and web front end for data/MC comparison jobs

CEDAR Projects

- HepML
  - Interchange language for these components and externals
- Professor
  - Added as part of MCNet
  - Interpolation based tuning layer on top of Rivet

HepForge

- Wiki, bug tracking, version control, code repository, mailing lists, web space…
- There for several years now
  - Rather stable
  - Continued system support from IPPP
- Used by all CEDAR projects and many MCnet projects, plus others
  - Fortran herwig, jimmy & pythia6
  - Sherpa, Herwig++
  - LHAPDF
  - …

HepData

- Reimplemented in MySQL several years ago.
  - Web communication for users is still via legacy DB
  - Prototype direct web interface exists
- Exports data in HepML for Rivet and HZTool
- Communicates (provides data for) JetWeb
- Can import data in HepML

Rivet

- See Andy's talk yesterday
  - First (1.0) release earlier this year
  - 1.1 release imminent
- Starting to be used now in MCnet and ATLAS
  - Uses GENSER/LCG generator distributions
  - Ready for people to start implement analyses, and reimplementing those from HZTool.
- Uses HepML records from HepData
- Output used by Professor
- Not yet talking to JetWeb
- Generator interfaces separated in AGILe

JetWeb

- Stable for a long time now, but of limited use due to lack of data
- Reads/writes HepML (generator parameters)
- Gets data direct from HepData
- Still uses HZTool rather than Rivet
- Development effort has focussed on Rivet for the past year. Will return to JetWeb later this year.

HepML

- Used for interchange of data records between HepData, Rivet, JetWeb, HZTool
- Used for interchange of parameters between HZTool and JetWeb
  - Plan to add HepML interface to AGILe
- Parts developed by Genser/MCDB group use for interchange between generators and MCDB

Professor

- See Andy's talk yesterday
- Useable with Rivet now. Work ongoing.

Summary

- All projects are delivered at some reasonable level of functionality
- Rivet is the key now, and is ready for general use
  - Want to encourage use in early LHC data to ensure comparability of (corrected) data. (See Lars' talk on Tuesday)
- Main tasks remaining
  - Rivet/JetWeb interaction (via HepML)
  - Direct web front end to MySQL – ditch legacy DB completely
  - Do physics with them all, and encourage and support wider use