

# Hall A Analysis Workshop Summary

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Jefferson Lab

Hall A Collaboration Meeting  
December 14, 2007

# Outline

## 1 Reports

- C++ Analysis Software Status (Ole Hansen)
- E06-007 (Pb(e,e'p)) Analysis Update (Juan Cornejo)
- EPICS-MySQL Interface (Brandon Craver)
- Database Applications in Analysis (Alexandre Camsonne)

## 2 Discussion

- Open Issues
- Communication, Coordination

[http://hallaweb.jlab.org/data\\_reduc/AnaWork2007b/](http://hallaweb.jlab.org/data_reduc/AnaWork2007b/)

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  - More user-friendly database format
  - Better performance
- Future support policy: **maintenance mode**
  - Hall A staff continues to support core package (bugfixes, minor updates)
  - Major new features expected to be contributed by users who need them

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  - **Recursive template matching** (Dell'orso et al., NIM (1990))
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  - Fast and efficient (speed and memory)
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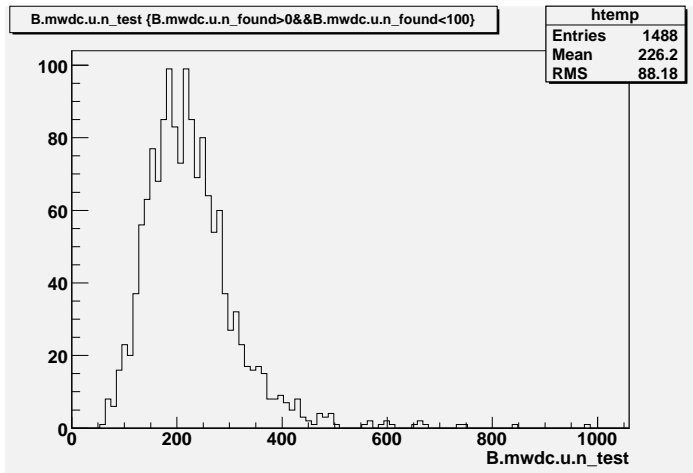
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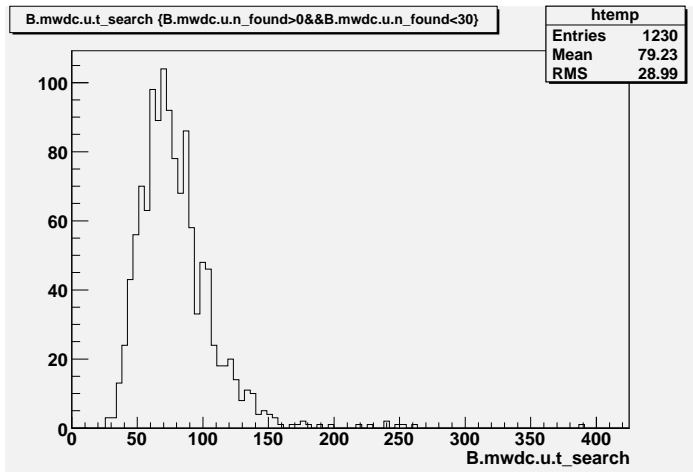
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# Pattern Comparisons per Event per Projection



# Real Time in TreeSearch per Event ( $\mu\text{s}$ )



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- Aiming for **850 keV** missing energy resolution
- Achieved **1 MeV** unless using very strict cuts
- **Raster corrections** main culprit?
  - Large raster size requires **2nd order** *XTRANSPORT* correction
  - Still not fully corrected
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- Perl scripts to **create & fill MySQL database** with all EPICS data from sets of runs
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- **Automate** in Counting House?

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# Database/MySQL Applications in Analysis

- MySQL is the preferred database
- Many uses
  - Mapping, calibration, geometry (=Analyzer DB files)
  - Run parameters
  - Slow control
- Many deployments
  - Compton
  - saGDH, HAPPEX, DVCS
  - LEDEX,  $^3\text{He}/^4\text{He}$ , CSR, ...
- Could be better coordinated

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- Two main categories
  - Physics/detector analysis (understanding data)
  - Technical software issues (performance, features, bugs)
- Identified 2–3 man years worth of projects
- Manpower is serious limitation
- Suggestions
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- Analysis **bulletin board** (“forum”) on Web
- Improved **analysis resources** Web pages
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- Data analysis framework maturing, but still **many ideas for improvement**.
- Need **better organization** and efficiency