

Analysis Software Status Report

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Hall A Data Analysis Workshop
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Supported Podd Releases

- 2008 vintage: version 1.5.16 [▶ release notes](#)
 - ▶ Stable production code
 - ▶ Used by current experiments (2008–)
 - ▶ Required for new BigBite tracking software [▶ web](#)
 - ▶ Strongly recommended for all new development
- 2006 vintage: version 1.4.12 [▶ release notes](#)
 - ▶ Stable production code
 - ▶ Still used by some older experiments
 - ▶ Contains backports of many version 1.5 bugfixes

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Podd 1.5: 2010 Improvements

- Database bugfixes (“config” sections, allow empty strings, arbitrary file paths) [▶ details](#)
- New “text variable” system to make text input files more manageable [▶ details](#)
- THaDecData [▶ doc](#) bugfixes (crash on delete, index off)
- EPICS truncation bug fix (R. Michaels)
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Database config sections

Selecting different database sections:

Run database db_run.dat

```
[ 2010-05-01 10:00:00 ]
L.vdc.config = highmom
[ 2010-05-02 15:00:00 ]
# Note the empty RHS -> empty string
L.config =
```

db_L.vdc.dat

```
[ L.global ]
some comment
[ config=standard ]
comment: this will be loaded for config="" and config="standard"
t 0 0 0 -1.000 0.05 0.0002 0.000
...
[ config = highmom ]
comment: this will only be loaded for config="highmom"
t 0 0 0 -1.005 0.02 0.0003 0.000
...
```

Text Variables

“Macros for input files”

replay.C

```
THaHRS* HRSL = new THaHRS( "L", "Left HRS" );  
gHaTextvars->Add( "arm", HRSL->GetName() );  
gHaTextvars->Add( "spectros", "L,R" );  
gHaTextvars->Add( "planes", "u1,v1,u2,v2" );
```

db_run.dat

```
${arm}.pcentral = 1.75  
${arm}.theta = 15.007
```

replay.odef

```
variable ${spectros}.vdc.${planes}.nhits
```

Works with database, output and cut definition files [▶ doc](#)

Miscellaneous

- Support for ROOT up to 5.26, g++ up to 4.5 (Fedora 14)
- Support for rpm-installed ROOT (e.g. Fedora 13, 14)
- Full support for 64-bit Linux platforms

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APEX VDC Reconstruction

Goal: handle very high rate (MHz), many clusters per plane

- 3-parameter cluster fit implemented $\longrightarrow x, m, t_0$
- Match u and v clusters with $t_0 \approx 0$ (trigger track)
- Reject events if any matching ambiguity
- Still room for improvement: may resolve ambiguities with other info, e.g. from scintillator bars, etc.

See Seamus's talk today [▶ talk](#)

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TreeSearch Reconstruction for GEM Trackers

Goal: adapt BigBite tracking to GEMs (PREX, SBS, ...)

- Decoder for strip-based readout planes (finds clusters)
- Simplified filling of hitpatterns (no L/R ambiguity)
- Optional road matching using hit ADC values
- Status
 - ▶ Working for both x/y/u/v and x/y-only configurations
 - ▶ Testing with both Monte Carlo and PREX data in progress

See talks on SBS simulations today [▶ talk](#) and Friday [▶ talk](#)

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Plans for Podd 1.6

- “Event Type Handler” plug-ins
- Consistent use of LoadDB [▶ doc](#) to read database
- SQL backend for LoadDB
- Use time-zone safe `TTimeStamp` [▶ doc](#) for date/time
- Output speed improvement
- Remove backlog of binary-compatibility workarounds

Assorted Wishlist Items

- **Multi-threading (→ develop)**
- Event re-assembly for pipelined DAQ (→ develop)
- Script interface (CINT flaky → Python?)

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