

MIPP Offline Software Update

I. Package Updates

II. To-Do List

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MIPP@FNAL 8 FEB 2003

Package Updates

EventDataModel

Events are split by:

Header/MC/Detector Simulation/Raw Data/Summary



"Real" Data has only Header+RawData+Summary

Performance:

Header only	= 0.5 ms/evt (2000 evts/sec)
Header+MC+Data+Summary	= 4 ms/evt (250 evts/s) <i>(slightly bogus "RawData")</i>
Header+MC+Data+Summary+DetSim	= 40 ms/evt (25 evts/s, 20Mb/s)

Package Updates

Geometry

- Implemented C++ interface to detector geometry using ROOT's TGeo classes

Path: GEANT3 (e907mc) -> ZEBRA file -> g2root -> macro -> GMIPPGeo class

(ok, this is a little hoaky but it works...Thanks to Raja for the first 3 steps)

- TGeo classes are under active development by ROOT team
 - [] Methods/Interfaces still changing, but I think this will save us maintenance and development time in the "long" run (after a few more months...)
- RICH reconstruction and EventDisplay currently using this interface
 - [] Interface to RICH geometry by Sharon Seun. Used to project tracks through RICH and calculate ring centers

Classes:

- GMIPPGeo - Top level interface to entire detector
- GRICHGeo - Interface to RICH geometry

Package Updates

EventDisplay

- Basic GUI layout in place
- Uses ROOT's "TG" classes and signal/slot mechanism for event call backs (Not greatest graphics and signal/slot packages out there, but they do everything we need them to do while minimizing the number of external packages needed to build MIPP software)
- Basic display is set up to look like web browser so things should be more-or-less where you expect them in the menus:

FILE: Open/Close/Save/Print (...)

EDIT: Preferences (...)

WINDOW: Launcher for sub-detector displays and displays of MC and Reconstruction information

HELP: Release notes, version information, help (someday?)

EventDisplay

What it does now:

- Connects to input data stream (forward, backward, etc.)
- Displays full detector geometry and header
- Displays MonteCarlo hits
- Simple print interface (produces .ps, .eps, .gif)
- Provides ROOT prompt for working directly with ROOT

What is needed:

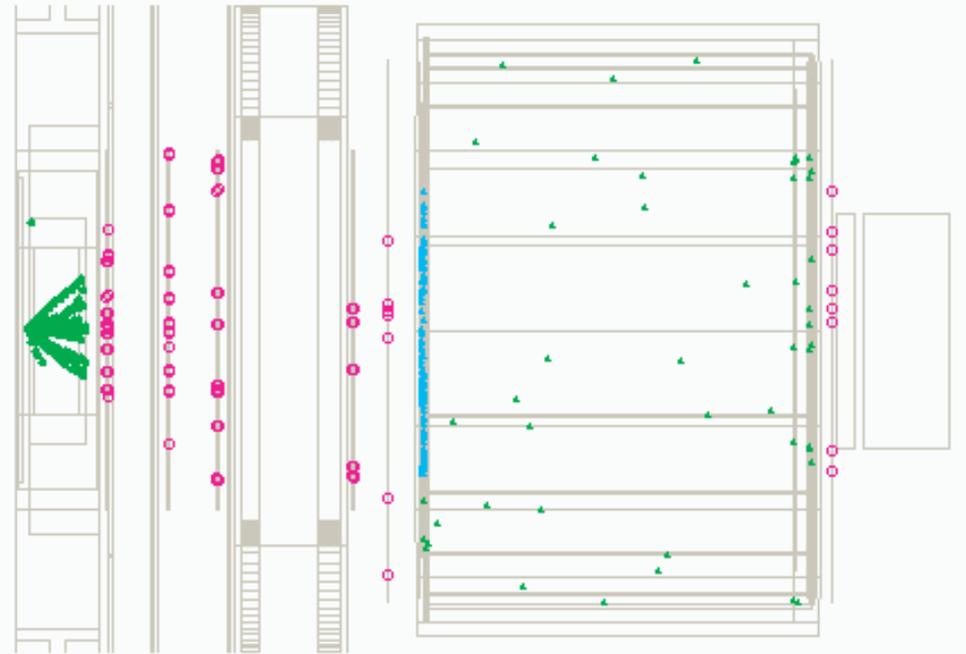
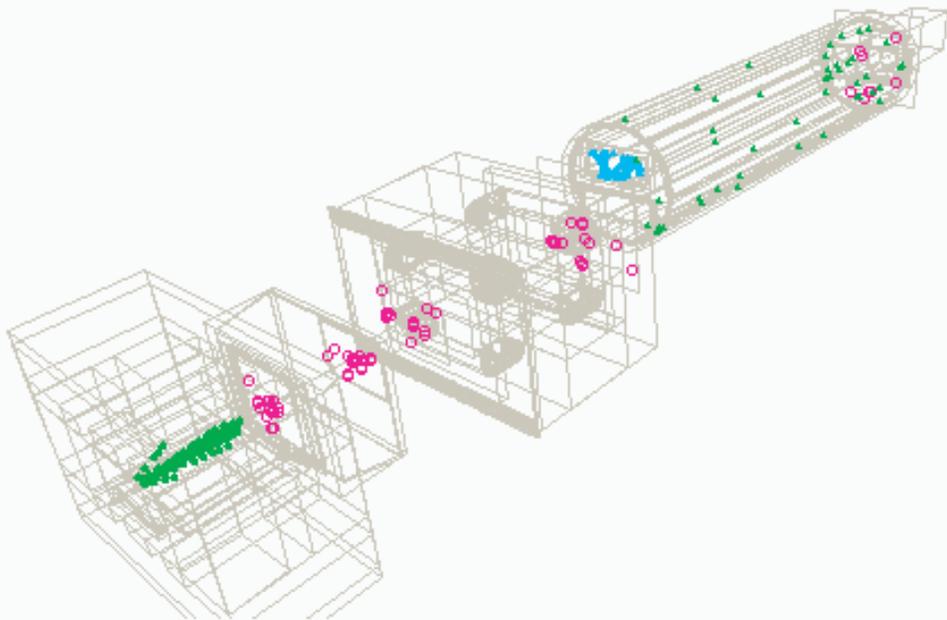
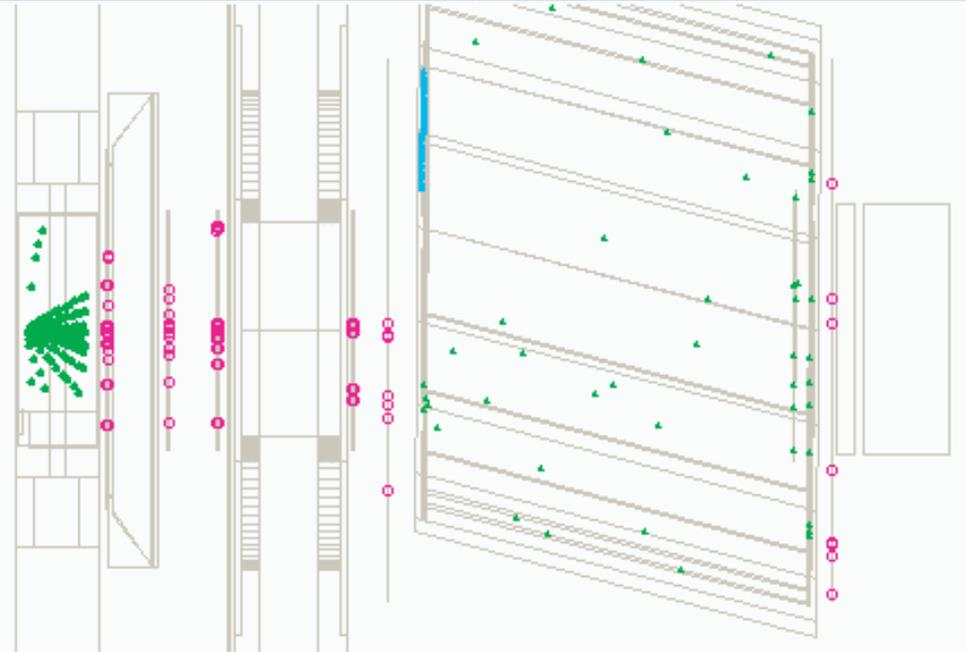
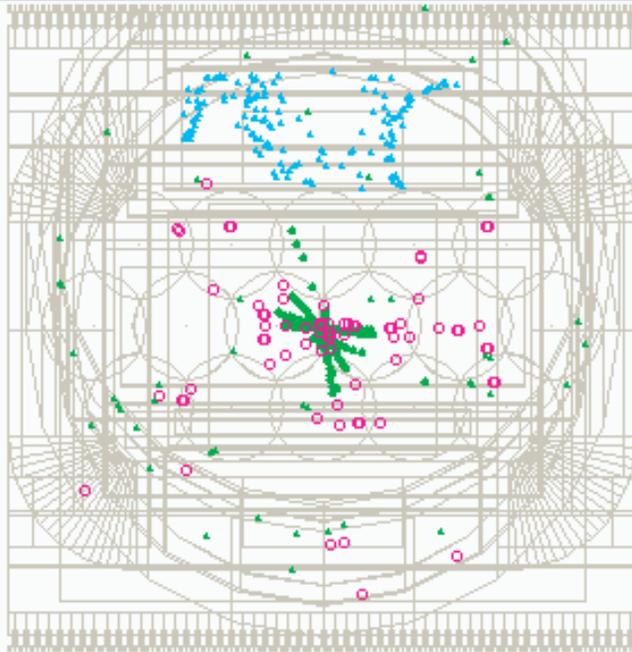
- Lots!
- Base class for sub-detector displays. Should handle common layout issues, signal/slot connections to avoid duplicating this code in all the subdetector displays
- Implementations of sub-detector displays (Sharon's RICH display is good candidate!)
- Interface to user histograms and analysis
- Save events
- Flesh out navigation and display options (MC tracks on/off, selected tracks on/off...)

MIPP (FNAL E907)

Run: 1
SubRun: 0
Event: 1

2002/12/26
15:44:51.000000000

Trigger: 0
Version: 0

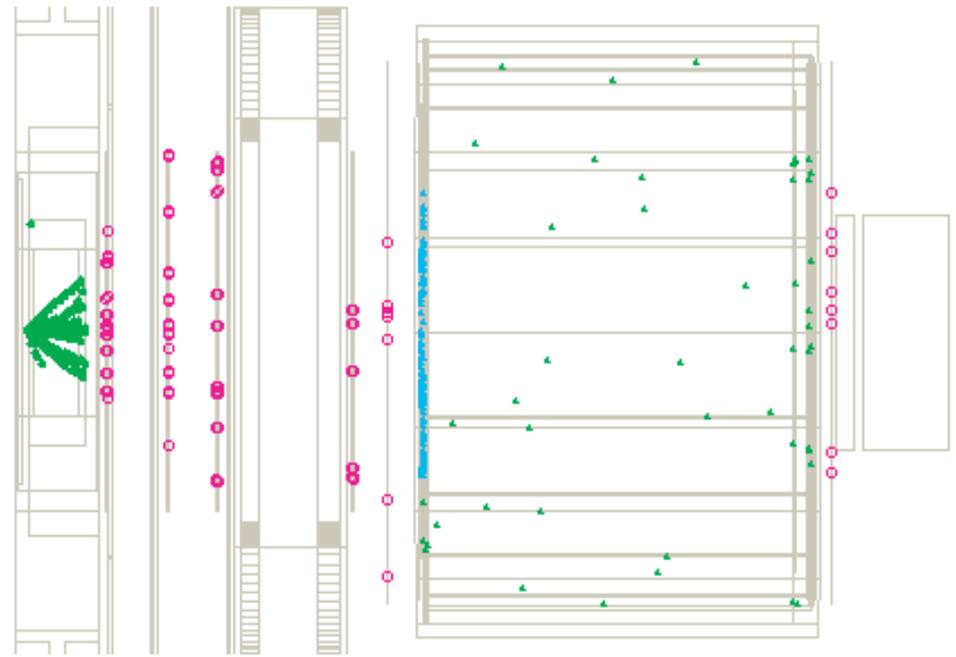
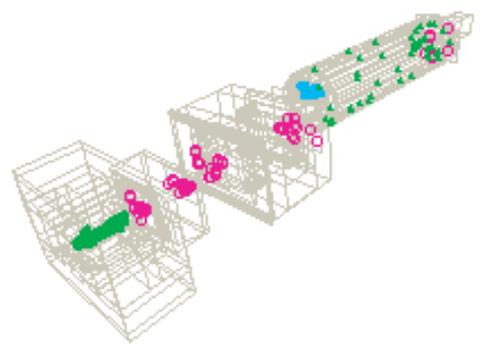
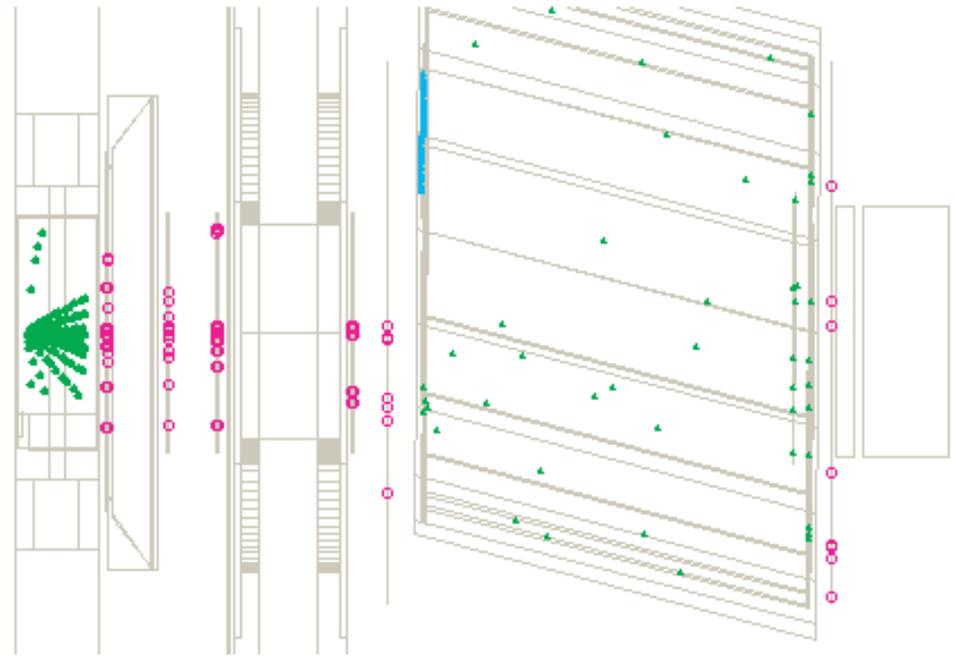
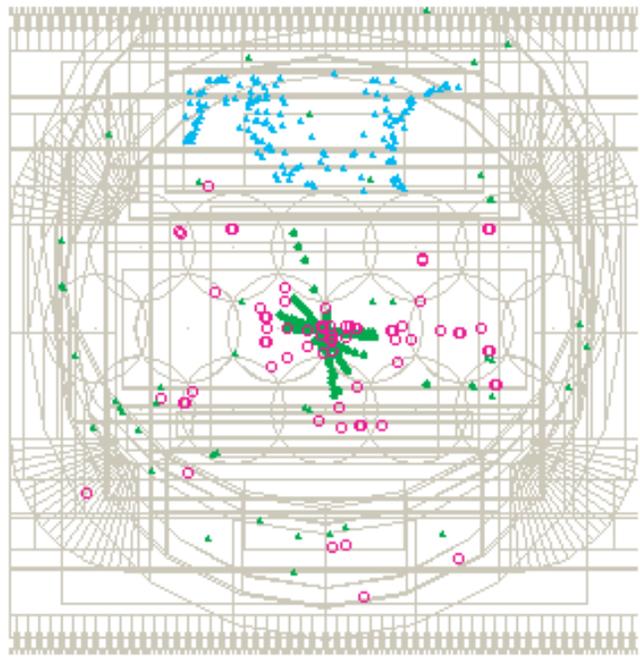


MIPP (FNAL E907)

Run: 1
SubRun: 0
Event: 1

2002/12/26
15:44:51.000000000

Trigger: 0
Version: 0

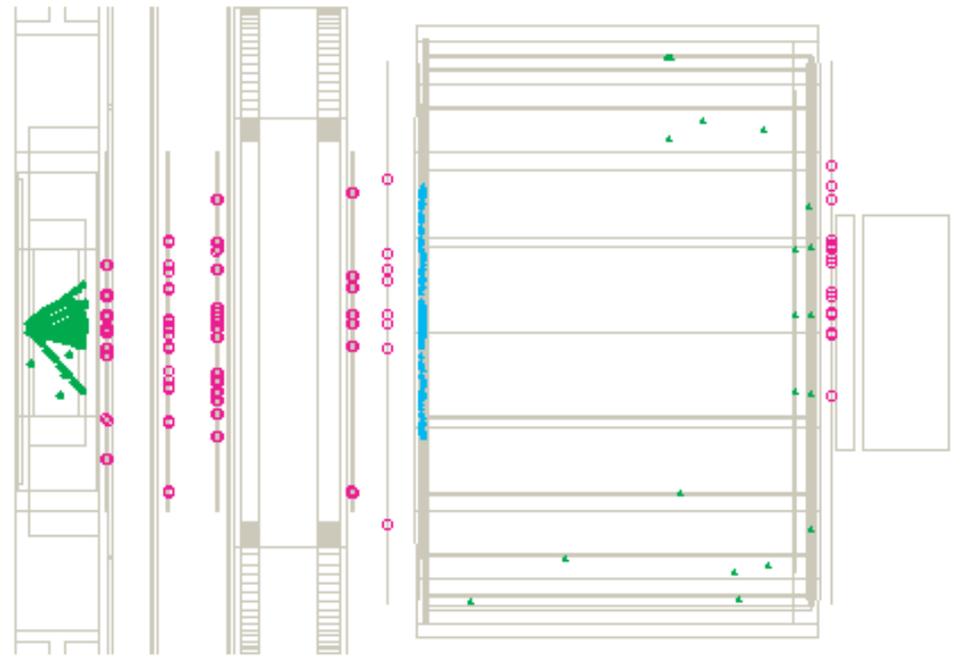
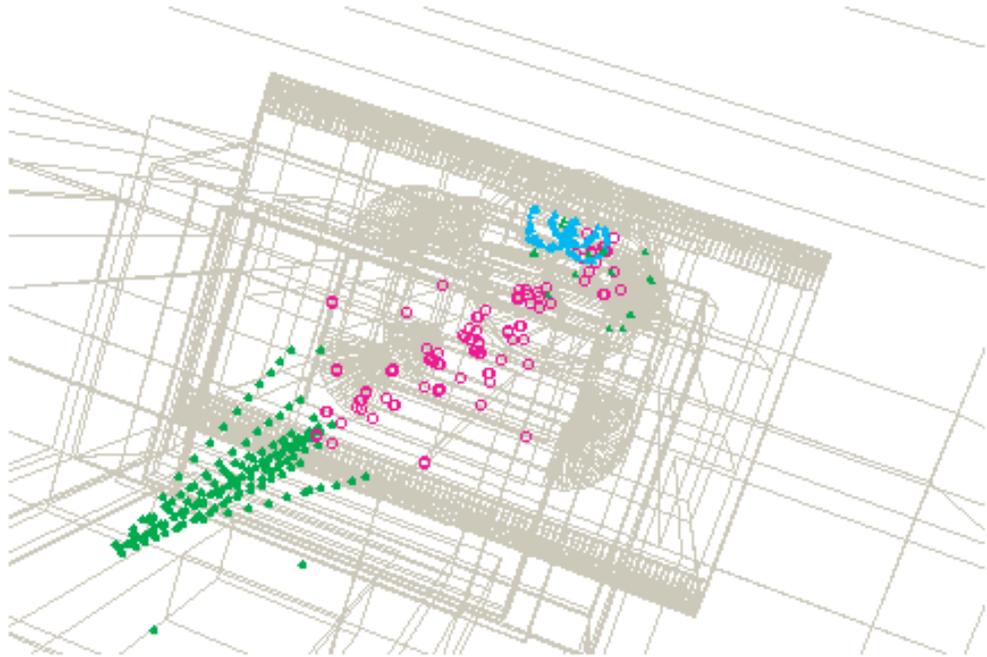
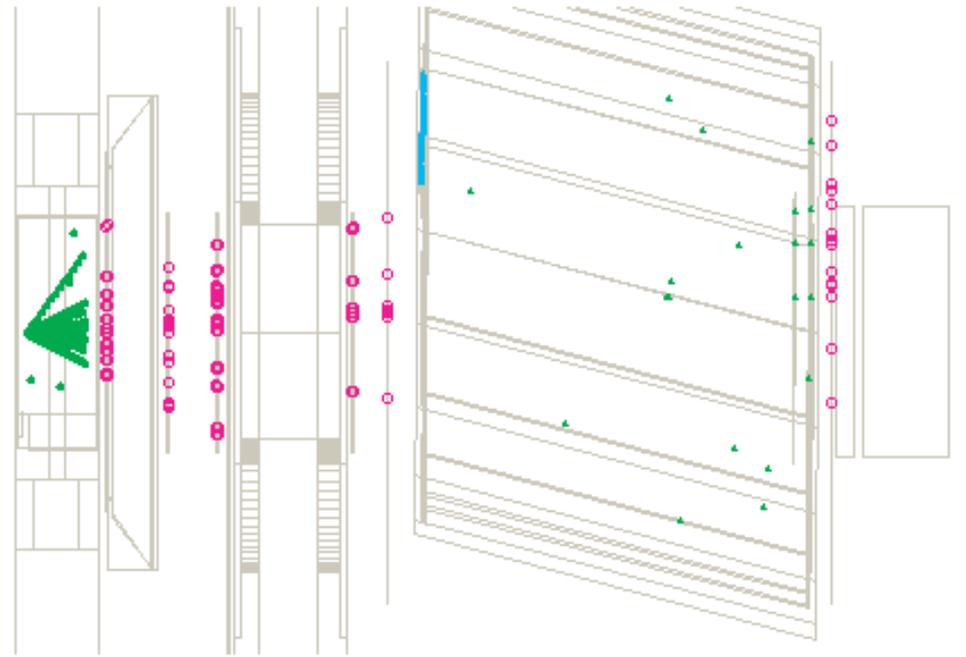
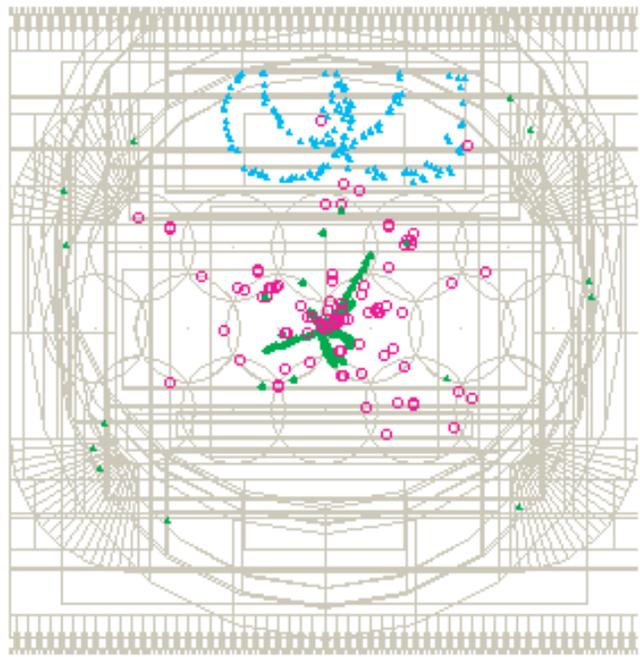


MIPP (FNAL E907)

Run: 1
SubRun: 0
Event: 10

2002/12/26
15:45:40.000000000

Trigger: 0
Version: 0



Package Updates

Digitization and Reconstruction

TPC: Andre Lebedev

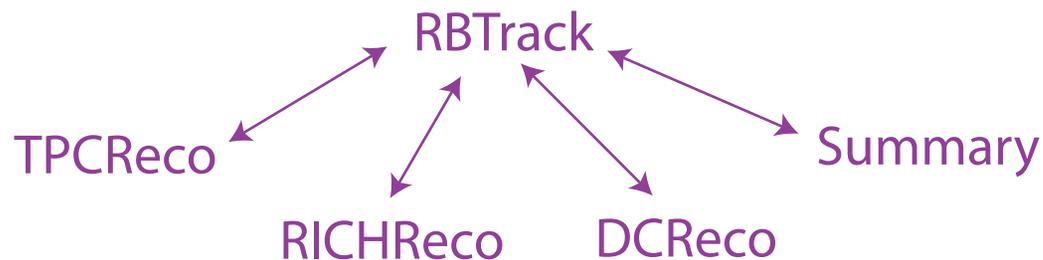
RICH: Sharon Seun

RecoBase (*Andre Lebedev*)

Start of base class for common reconstruction objects (Tracks)

Minimizes couplings between reconstruction packages.

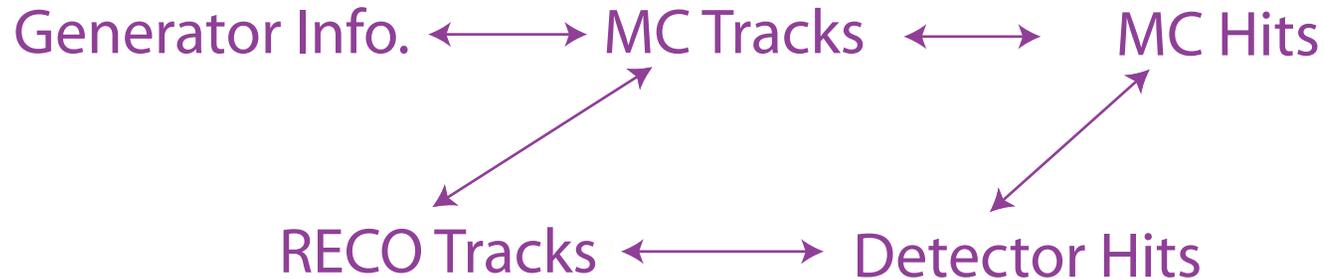
ie. RICH code will talk to "Tracks" not "TPC tracks"



Database: David Lange

TO DO List

- Need package to help navigate through MC and Reconstruction data



- Complete Digitization for sub detectors (DC/CKOV/TOF(?)/ECAL/HCAL)
- Flesh out remaining raw data types for each sub detector (currently have just TPC and RICH)
- Online/Offline interface
 - Data passing for online monitoring/reformatting
- Extend tracking from TPC to drift chambers
- Interface for JGG and ROSY fields
- Incorporate PID from CKOV and TOF in reconstruction