ded
Summer 2010

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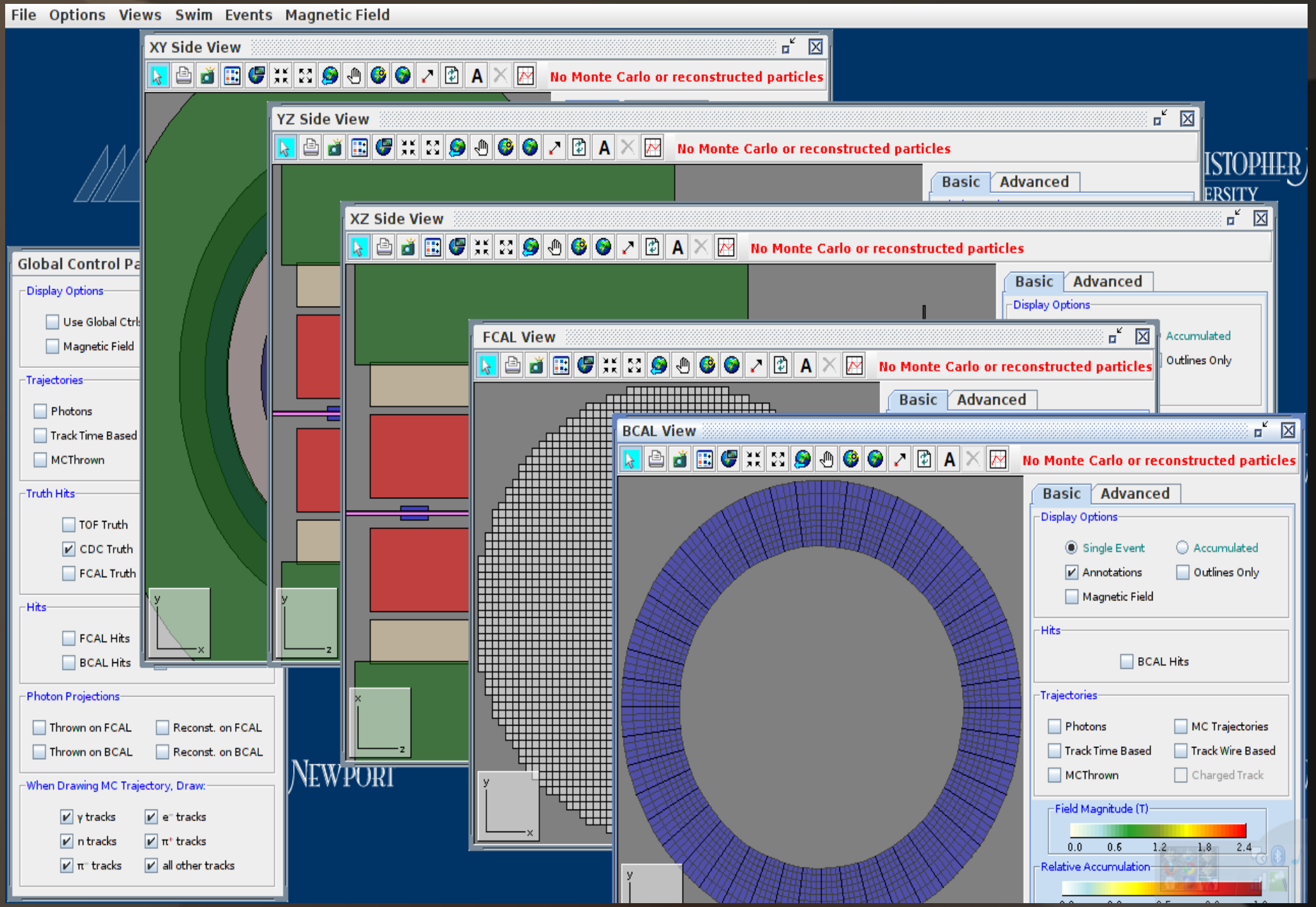

File Options Views Swim Events Magnetic Field
XY Side View
No Monte Carlo or reconstructed particles
YZ Side View
No Monte Carlo or reconstructed particles
XZ Side View
No Monte Carlo or reconstructed particles
FCAL View
No Monte Carlo or reconstructed particles
BCAL View
No Monte Carlo or reconstructed particles
Basic
Advanced
Global Control Pa
Display Options
Use Global Ctrl
Magnetic Field
Trajectories
Photons
Track Time Based
MCThrown
Truth Hits
TOF Truth
CDC Truth
FCAL Truth
Hits
FCAL Hits
BCAL Hits
Photon Projections
Thrown on FCAL
Reconst. on FCAL
Thrown on BCAL
Reconst. on BCAL
When Drawing MC Trajectory, Draw:
γ tracks
e⁻ tracks
n tracks
π⁺ tracks
π⁻ tracks
all other tracks
Accumulated
Outlines Only
Single Event
Annotations
Magnetic Field
BCAL Hits
MC Trajectories
Track Wire Based
Charged Track
Field Magnitude (T)
0.0 0.6 1.2 1.8 2.4
Relative Accumulation

Getting ded

- Stable
  - Pre-built
  - Available on the halld disk at /group/halld/Software/builds/ded
- Development
  - Source
  - SVN
    - Avaliable through the CLAS software repository at https://clas12svn.jlab.org/repos/trunk/clas12

Building & Running

- Stable
  - Unix/Linux/OS X – run ded.sh
  - Windows – double click ded.bat
- Development
  - Built in eclipse
  - Must get both ded and bCNU they are in the clas repository
  - Can be run in eclipse or exported from eclipse to a jar
  - Ant.xml

Opening event files

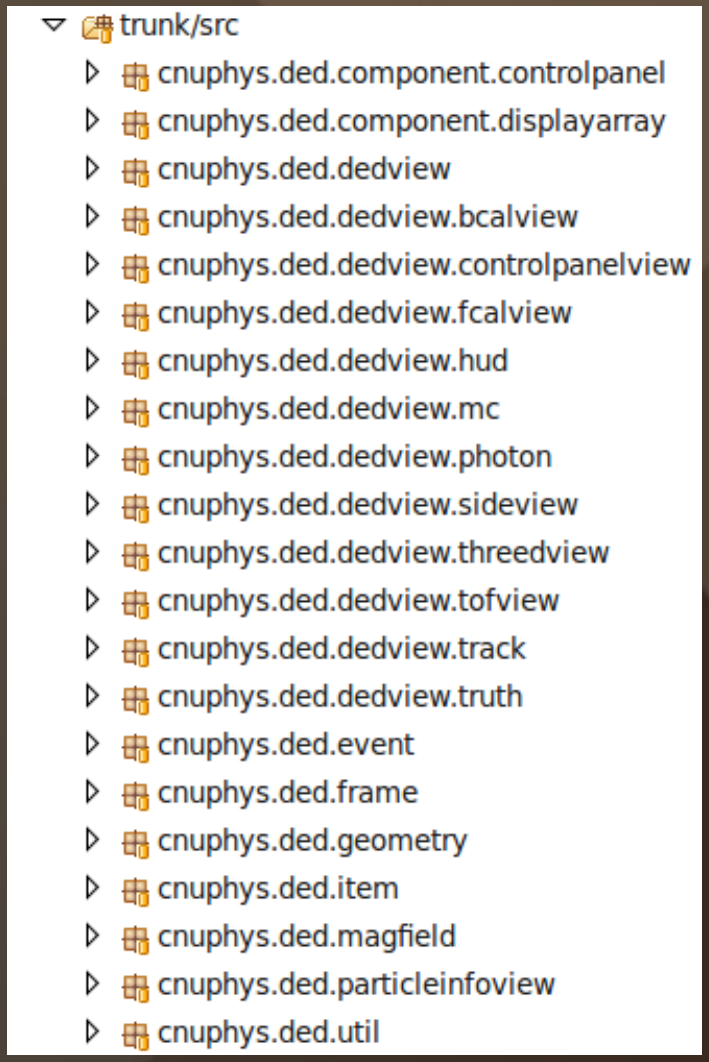
- Must be in evio
- These can be generated using the danaevio plugin which can be found at /group/halld/Software/builds/sim-recon/sim-recon-2010-05-17/src/programs/Utilities/plugins
- Documentation on how to use the plugin can be found on the wiki at HOWTO: ded: Install & Run
  - E.g. hd_ana -PPLUGINS=danaevio hdgeant_smeared.hddm

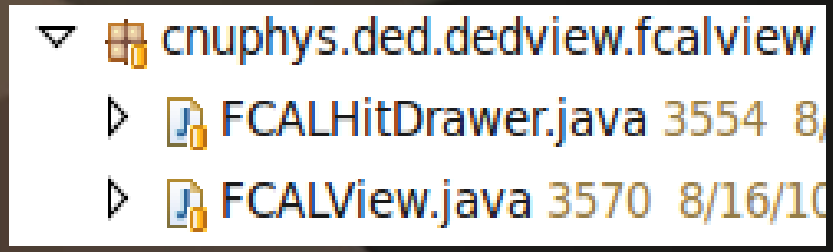
Geometry

GeoConstants.java

```
package cnuphys.ded.geometry;

 * Hard coded geometry constants. To be used when geometry service, database, or
public class GeoConstants {

    //public static final double BCAL_Rmin = 65.0;
    public static final double BCAL_Rmin = 64.3;
    //public static final double BCAL_Rmax = 87.46;
    public static final double BCAL_Rmax = 90.5;
    public static final double BCAL_Zlen = 390.0;
    public static final double BCAL_Zmin = 212.0 - BCAL_Zlen / 2.0;
    public static final double FCAL_Zlen = 45.0;
    public static final double FCAL_Zmin = 622.8;
    public static final double FCAL_Rmin = 6.0;
    public static final double FCAL_Rmax = 212.0 / 2.0;
    public static final double CDC_Rmin = 9.0;
    public static final double CDC_Rmax = 59.0;
    public static final double CDC_Zlen = 150.0;
    public static final double CDC_Zmin = 17.0;
    public static final double TOF_Rmax = 125.0;
    public static final double TOF_Rmin = 6.0;
    public static final double TOF_Zlen = 2.54;
    public static final double TOF_Zmin = 618.8;
    public static final double FDC_Rmin = 3.5;
    public static final double FDC_Rmax = 48.5;
    public static final double TARGET_Zmid = 65.0;
    public static final double TARGET_Zlen = 30.0;
    public static final double TARGET_Rmax = 4.0; // pulled this out of the air

    // fdc zlimits--six "layers?" per package, four packages
    private static final double p1_zmin[] = { 176.1586, 178.1586, 180.1586,
    private static final double p1_zmax[] = { 177.1614, 179.1614, 181.1614,

    private static final double p2_zmin[] = { 233.7186, 235.7186, 237.7186,
    private static final double p2_zmax[] = { 234.7214, 236.7214, 238.7214,
```

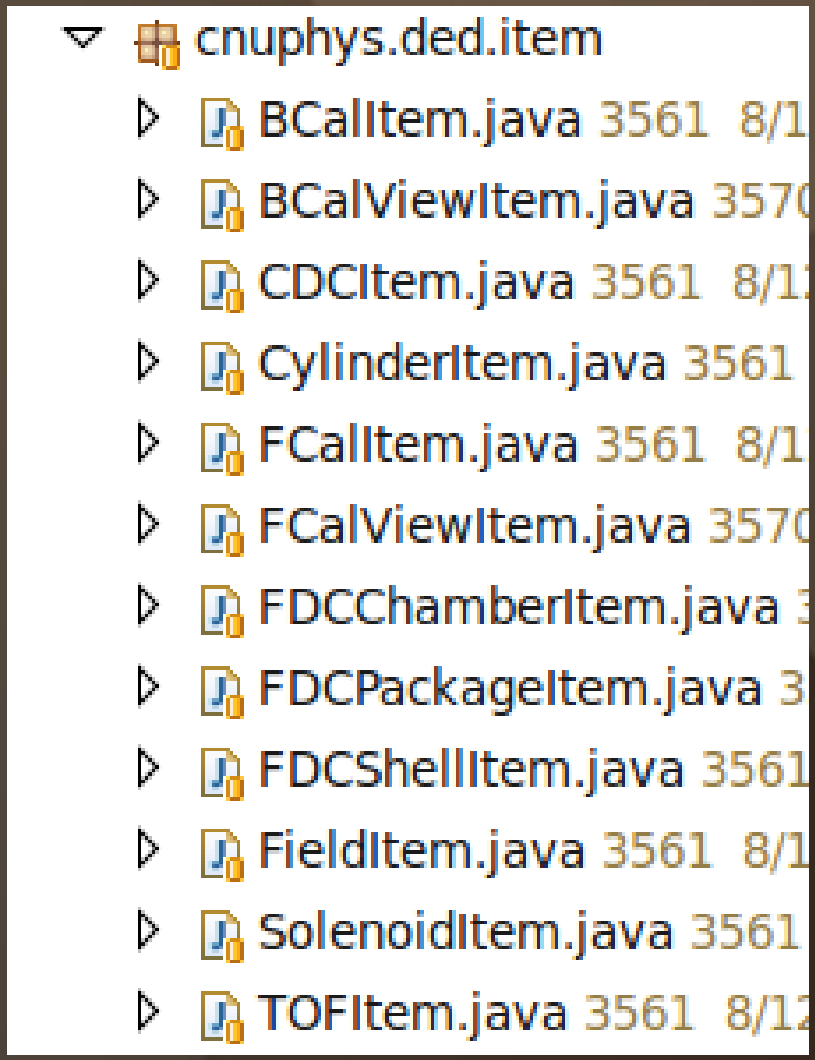
Structure





- XHitDrawer draws the specific hits
- XView draws the view that the item and hit drawer draw upon

Structure (cont'd)



- XItem draws the detector for side view
- XItemView draws the detector for the dedicated view

Features Summary

- Current:
  - Color coded
  - Charged/Uncharged
  - HUD (Heads Up Display)
  - Particle info views
  - Most of hdview2 features
  - Socket communications
- Future:
  - CLARA for on demand events
  - Dynamic bank loading
  - 3D views
  - Magnetic field
  - Accumulated hits
  - Command line args
  - ded.app & ded.exe