

## **RICHEBEngine**

initRICHEvent  
clear RICH banks  
Connect to CCDB

## **ProcessDataEvent**

## **RICHPMTReconstruction**

- processRawData
  - readRawBank
    - readRawEdgesHIPO
  - selectEdges
  - reconstructHits
  - findClusters
  - selectGoodClusters
  - findXTalk
  - write RICH::Hits
  - write RICH:Clusters

## **RICHEdge**

deal with raw TDC

## **RICHHit**

define geometry and time

## **RICHCluster**

define centroid

## **RICHEventBuilder**

- create RICHevent
- processDCData
  - readForwardTracks
  - readCherenkovResponse
  - process\_DC-RICH\_Match
  - write REC::RICH
- processRICHData
  - find\_Rich\_Particles
  - find\_Analytic solution
  - find Ray-traced solution
    - write RICH::Hadrons
    - write RICH::Photons

## **RICHEvent**

- throw\_photons
  - RayTrace
- associate\_throws
- trace\_photons
  - RayTrace
- get\_pid
- pid\_probability

## **RICHParticle**

hadron or photon

## **RICHsolution**

store the single photon infos

## **RICHio**

deal with hipo tables

## **RICHTool**

define geometry  
define ray-tracing  
find\_intersection<sup>2</sup>  
OpticalRotation

## **RICHComponent**

store optical infos  
store CSG info

## **RICHLayer**

define tracking planes

## **RICHPixel**

pixel geometry, too detailed

## **RICHConstants**

define reconstruction parameters

## **RICHRay**

extension of Line3D

## **RICHIntersection**

store infos at optical boundary  
ref index, normals, components

## **Quaternion**

rotation utility

<sup>2</sup> intersection\_with\_faces in Shape3D