Summary Monday

Pandora

- reference steering files for 3 flavours:
  - “standard”: new, best calibration
    -> in svn head of ILDConfig
  - “photon improved”: current best version by Bono
    -> in svn head of ILDConfig (as default)
  - “Garlic input”: using Garlic photons
    -> still need steering -> Bono will send

Cluster Properties I

- getType:
  - should be bits from calos contributing energy
  - not used now -> do we need it ? – to leave unused
- getEnergy: Pandora improved energies - todo
- getEnergyError:
  - if pdg != 22/11: 60%/ sqrt(getEnergy) +3%
  - if pdg = 11/22: 17%/sqrt(getEnergy) + 1% ,
    as used in Pandora's track-cluster matching - todo
- get SubdetectorEnergies:
  - raw hit sums
  - split between barrel / endcaps -> todo
- getHitContributions = if hit belongs to several clusters! - not used by Pandora

Cluster Properties II

- getPosition: center-of-gravity as default - ok

  for photons: via cluster shape (Graham & John todo: verify implementation in Pandora and transfer information out to LCIO for Cluster)
- getITheta/IPhi: direction of cluster main axis
- getPositionError, getITheta/IPhiError: rms of cog/main axis, to be calcuated in the same place: ClusterShapes.cc - TODO (->Mikael)
- all properties will be set in MarlinPandora/.../PfoCreator.cc
- routines for actual calculations:
  -> eventually to MarlinUtil/ClusterShapes
  -> for development: MarlinReco/Analysis/

RecoParticle Properties (I)

- currently filled in PFOCreator.cc
- getType: particle "ID" by Pandora
- isCompound: revise logic
  - add "is not used in compound particle" = isConstituent
  - todo!
- momentum / energy: from track or cluster depending on charge
- getMass: set independently!
- getCharge: as is
- getCovariance:
  - charged PFOs: implemented by Tino – todo: put in MarlinUtil/ (MarlinReco/ Analysis) and use in PfoCreator.cc - Tino
  - neutral PFOs: from cluster uncertainties – todo
- getReferencePoint (todo?):
  - charged PFOs: z0 and (x0,y0) from (d0, phi0)
  - neutral PFOs: cluster position (cog or improved from shower shape)

RecoParticle Properties (II)

- getParticlesIDs: as discussed
- getParticles: if compound...
- getTracks, getClusters: ...
- getStartVertex, getEndVertex (todo):
  - should be filled by Pandora for V0s, Kinks etc
  - should be filled by vertexing for the rest

    -> needs to be able to update PFO!
  - setStartVertex, no data member for EndVertex -> derived from getStartVertex of daughter particles on the fly, NULL else

Pi0 Finder

- Graham presented processor structure / sequence
- needs porting from Brian's private code
- possibly discussion of MarlinKinfit