

PFA interface updates

Mat Charles, U. Iowa

Added Niels's photon-finder

In `org.lcsim.recon.cluster.mst`:

- + `MSTPhotonFinderDriver` extends `Driver`
- + `MSTPhotonFinder` implements `Clusterer`

Two-pass approach: Find cores, then add nearby fragments.
Photon shape cuts not strong (feed into H-matrix?)

Inside a PFA, have to be a bit careful of MIPs:

- 1) Find MIP clusters in ECAL near inner surface
- 2) Look which ones are matched to tracks & remove them
- 3) Apply photon-finder to all remaining ECAL hits
- 4) Remove photon clusters
- 5) Run MIP-finder again

Charged particle finder

Refactored the interface. In `org.lcsim.recon.pfa.identifier`:

```
public interface TrackClusterMatcher {  
    public Cluster matchTrackToCluster(Track, List<Cluster>);  
}
```

 Could be one cluster from the input list

Could be a `BasicCluster` composed of several (Guilherme)

Match 1 track to 0-1 cluster (nearest cluster within range):

`SimpleTrackClusterMatcher` extends `Driver` implements `TrackClusterMatcher`

Match 1 track to 0-1 MIP-like cluster (proximity and direction at intercept):

`SimpleTrackMIPClusterMatcher` extends `SimpleTrackClusterMatcher`

Match `List<Track>` to `List<Cluster>`

`SimpleChargedParticleMaker` extends `Driver`

Match `List<Track>` to MIP-like clusters, optionally working back to parent cluster

`MIPChargedParticleMaker` extends `Driver`

Calibration again

I'm thinking of an interface for calibration to feed to SimpleNeutralParticleMaker that looks like:

```
public interface Calibration {  
    public double correctedEnergy(Cluster);  
}
```

with default implementation based on `Cluster.getEnergy()`;

But I remember this was controversial last time...