PFA: Future needs

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Status

- PandoraPFA did a great job for the CDR studies
- No major issues or bugs

Looking Ahead

- Particle ID
- Photon Energy Measurement
- Luminosity Spectrum Measurement

PID

- Efficiencies are sufficient for searches, as shown in the CLIC CDR.
- Still room for improvement which is needed for precision measurements (e.g. Z' cross section, AFB and ALR measurements)
  $\rightarrow$ low systematic errors are essential
  $\rightarrow$ need errors for the PID

Photons

Not studied yet:
Photon energy resolution without/with background
(Note: Photons are difficult and ID is the least efficient)

Use large angle bhabha electrons with 1.5 Tev and angle 8 degrees.

$\rightarrow$ significant bremstrahlung in the detector
$\rightarrow$ photon and the track are very close (double counting of energy very likely)

May need a different approach for these events, e.g. rely only on energy in calorimeter and not use the track.