Sector Finder

RICHARD TYSON

Algorithm

- Simple algorithm that retrieves the sector associated to each entry in the REC::Particle bank. Needed for eg sector dependent momentum corrections.
- Requires reading full `hipo::bank` object, ie not usable when operating iguana only on bank row elements.
- Creator algorithm, output is in REC::Particle::Sector which has same number of rows as REC::Particle and is ordered the same way.
- Follow CLAS12Root logic. For an entry in REC::Particle, use sector from:
  - REC::Track if it has entry for corresponding pindex
  - REC::Scintillator if it has entry for corresponding pindex and REC::Track doesn't
  - REC::Calorimeter if it has entry for corresponding pindex and both REC::Track & REC::Scintillator don't
- Users can add own yaml config file such that sector finder uses a specific bank from which to assign sector.

ZVertex Filter

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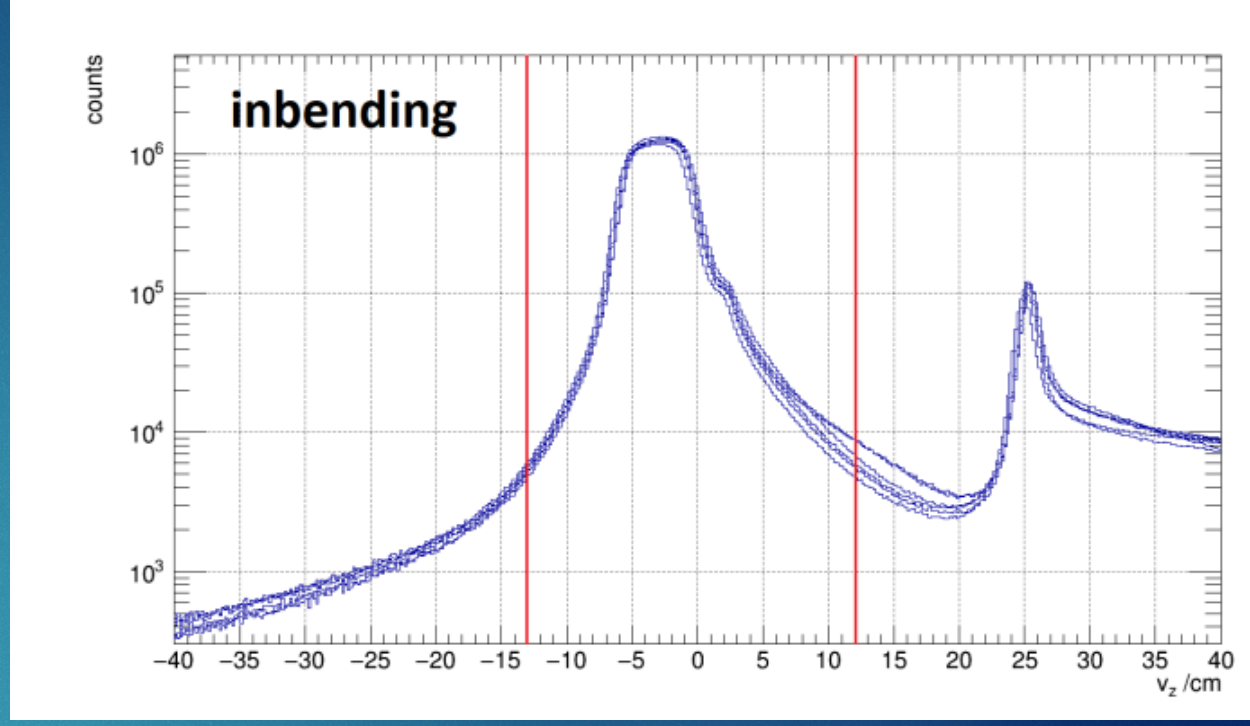
Algorithm

- Simple algorithm that cuts on vz in REC::Particle bank.
- Default cut values taken from RG-A analysis note (see RGA Analysis Overview and Procedures Nov4 2020 v3).
- Initially implemented to test implementation of config files.
- This allows for a run dependent cut (eg for inbending and outbending runs).
- As usual, users can modify cuts by adding their own yaml config files




```yaml
# Cut values for different run periods
clas12::ZVertexFilter:

  # default cuts
  - default:
    cuts: [ -20.0, 20.0 ]

  # RG-A fall2018 inbending
  - runs: [ 4760, 5419 ]
    cuts: [ -13.0, 12.0 ]

  # RG-A fall2018 outbending
  - runs: [ 5420, 5674 ]
    cuts: [ -18.0, 10.0 ]
```