

Checklist

December 12, 2016

HyCal Snake Scan

1. gain calibration (2 algorithms, 3 methods)
2. energy resolution
 - 2.a. crystal, lead glass, edge
 - 2.b. depending on position for transition region
 - 2.c. depending on distance to module center
3. linearity (not usable for physics periods)
4. trigger efficiency for all regions
5. island position reconstruction (logarithm or double logarithm method)
6. position resolution for all regions (ongoing)

HyCal Physics Calibration

1. gain calibration (1 algorithm, 1 method) for all production periods (might need to split some long periods if some changes are found)
2. linearity with 2 points
3. alignment run by run (ongoing)
4. cross-check of gain calibration (different methods)
5. cross-check of gain calibration (with snake scan, particularly inner modules)
6. cross-check energy resolution for Møller/ ep with snake scan

GEM Calibration

1. clustering algorithm
2. alignment run by run
3. detection efficiency
4. crosstalk ([efficiency dependency](#))
5. Hycal and GEM matching condition

Physics Analysis

1. define dead zones
2. define cuts for warning regions (last outer layer, first inner layer, dead modules)
3. define event selection cuts (ep , double arm Møller, single arm Møller)
4. extract yields versus θ/Q^2
5. simulate acceptance from efficiencies
6. calculate cross-section from yield
7. apply radiative corrections (to yield or to cross-section?)
8. normalize ep by Møller