



# Dgeometry BCAL routines

- The purpose is to fill the empty BCAL routines in Dgeometry

In what follows:

- **Red:** the option I would reject
- **Green:** The option I would choose



# GetBCALRmin

- Returns the minimum distance of a BCAL module from the beam line
- Will be used from BCALINNERRAD of DBCALGeometry
- **Option 1**: Get the Rmin including the support plate (64.2486 cm)
- **Option 2**: Get the Rmin excluding the support plate (65.0423 cm)

The value of Option 2 can be given from fADC\_radius[0] as well

# GetBCALfADCRadii

- New routine to replace the hard-coded values of fADC\_radius
- Returns the inner radius of every Layer and the outer radius of Layer 4



# GetBCALNmodules

- Returns the number of modules in the BCAL
- Can be used to replace every hard-coded “48” in DBCALGeometry.cc

# GetBCALCenterZ

- Returns the z-location of the center of each BCAL module
- Will be used from GLOBAL\_CENTER of DBCALGeometry (?)
- **Option 1:** Use the old value of 212cm (exists as deprecated in HDDS)
- **Option 2:** Use half of the length of the “barrel EMcal mother” (212.5 cm)



# GetBCALLength

- Returns the length of a BCAL module
- Will be used from BCALFIBERLENGTH of DBCALGeometry
- **Option 1:** Use z-length of “barrel Emcal module layer/sector \* ” (405.045 cm)
- **Option 2:** Use z-length of “barrel Emcal submodule in ring \* ” (390.0 cm)

# GetBCALDepth

- Returns the depth (height) of a BCAL module
- **Option 1:** Subtract BCALINNERAD from BCALOUTERRAD including the endplate
- **Option 2:** Subtract BCALINNERAD from BCALOUTERRAD excluding the endplate
- Maybe create a new routine (GetBCALRmax) to get the BCALOUTERRAD directly from HDDS