

sidaug05_tcmt

This is a variant of the Silicon Detector modelled as of Oct. 19, 2005, to be used for detector studies. Please see [sidaug05](#) for details of the baseline geometry.

The compact description of this detector in xml format can be found at http://www.lcsim.org/detectors/sidaug05_tcmt.zip.

What follows is a plain text description of the differences between the compact descriptions of sidaug05_tcmt and its baseline model, sidaug05. The basic differences are that both the HCal and muon system (TCMT) are based on scintillator, non-projective (fixed-size) cells, and the longitudinal segmentation of the muon system has changed to act as a tail catcher, not just as a muon tracker.

Readout segmentation

The following table compares the transverse segmentation details between this geometry with respect to the baseline:

component	sidaug05	sidaug05_tcmt
EMBarrel	Projective, $d\theta = \pi/1000$, $d\phi = 2\pi/2000$	Non-projective, 0.4cm x 0.4 cm
EMEndcap	Projective, $d\theta = \pi/1024$, $d\phi = 2\pi/1024$	Non-projective, 0.4cm x 0.4 cm
HADBarrel	Projective, $d\theta = \pi/600$, $d\phi = 2\pi/1200$	Non-projective, 1cm x 1cm
HADEndcap	Projective, $d\theta = \pi/600$, $d\phi = 2\pi/1200$	Non-projective, 1cm x 1cm
MuonBarrel	Projective, $d\theta = \pi/150$, $d\phi = 2\pi/300$	Non-projective, 3cm x 3cm
MuonEndcap	Projective, $d\theta = \pi/150$, $d\phi = 2\pi/300$	Non-projective, 3cm x 3cm

Longitudinal segmentation

Both barrel and endcaps of the TCMT systems are composed of 48 layers, each layer having the **same longitudinal segmentation as the HCal**, namely:

material	thickness
Stainless steel	2.0 cm
Polystyrene (active)	0.5 cm
G10	0.3 cm

Cell indices

The number of bits in calorimeter cell IDs have also been changed with respect to sidaug05, from 11 bits to 16 bits, including forward ECAL endcaps.