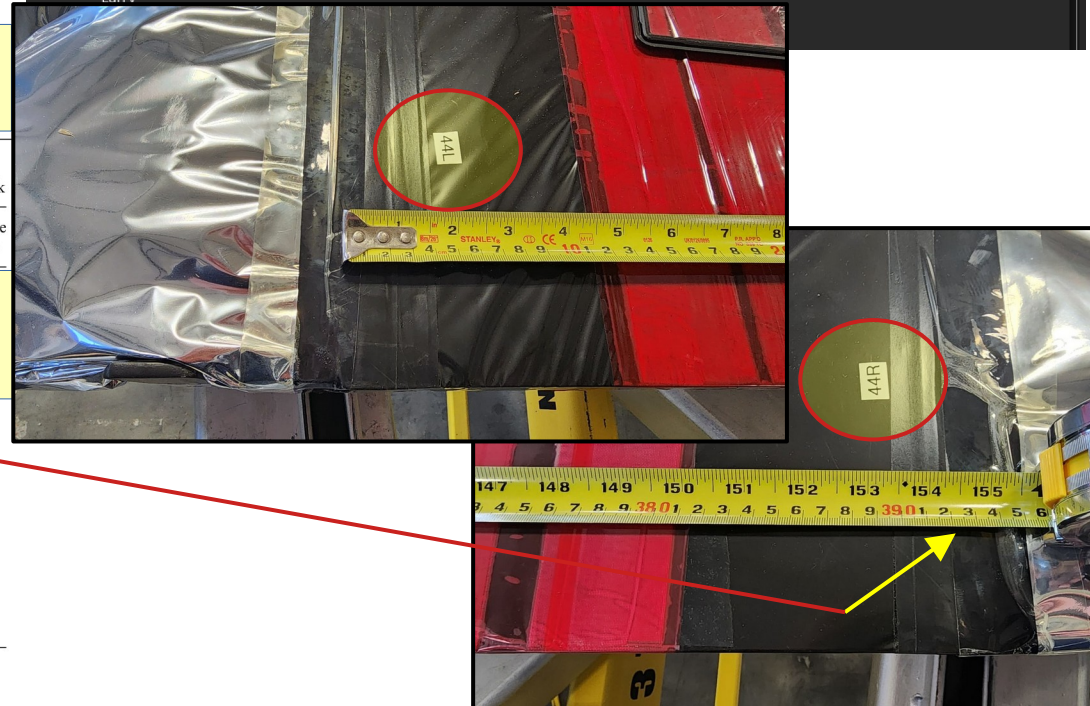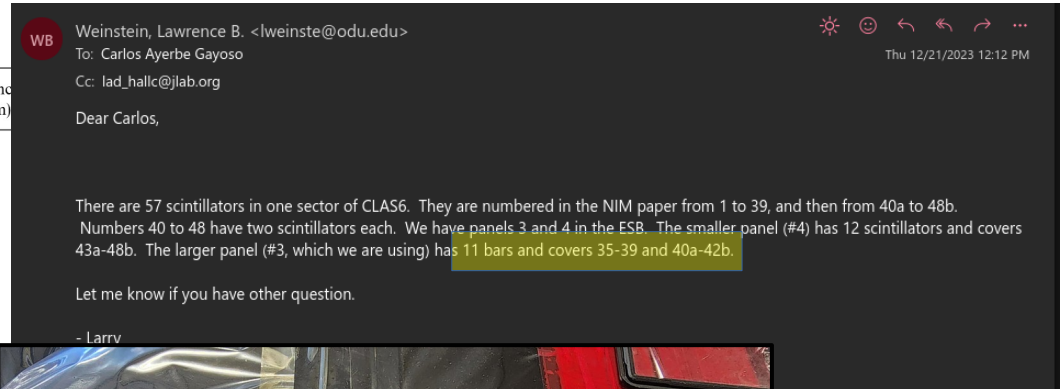# Scintillator bars labels

Table 3
Dimensions of the single large-angle scintillators in the time-of-flight system. All scintillators are nominally 5.08 cm thick

| Scintillator number	Width (cm)	Length (cm)	Light guide configuration	PMT	Nominal lab angle (deg)	Nominal distance from target (cm)
24	22	371.3	Bent	XP4312B/D1	47.4	514
25	22	378.2	Bent	XP4312B/D1	49.6	504
26	22	385.0	Bent	XP4312B/D1	51.9	495
27	22	391.9	Bent	XP4312B/D1	54.3	487
28	22	398.7	Bent	XP4312B/D1	56.8	480
29	22	405.6	Bent	XP4312B/D1	59.4	473
30	22	412.5	Bent	XP4312B/D1	62.0	468
31	22	419.3	Bent	XP4312B/D1	64.7	463
32	22	426.2	Bent	XP4312B/D1	67.4	460
33	22	433.0	Bent	XP4312B/D1	70.2	458
34	22	439.9	Bent	XP4312B/D1	72.9	457
35	22	445.1	Bent	XP4312B/D1	75.7	457
36	22	439.3	Bent	XP4312B/D1	78.2	446
37	22	433.6	Bent	XP4312B/D1	80.8	437
38	22	427.8	Bent	XP4312B/D1	83.5	428
39	22	422.0	Bent	XP4312B/D1	86.3	421

Table 4
Dimensions of paired large-angle scintillators in the time-of-flight system (see Section 3.4.7). All scintillators are nominally 5.08 cm thick

Scintillator number	Width (cm)	Length (cm)	Light guide configuration	PMT	Nominal lab angle (deg)	Nominal distance from target (cm)
40a	22	416.3	Bent	XP4312B/D1	89.3	414
40b	22	410.5	Bent	XP4312B/D1	92.2	409
41a	22	404.8	Bent	XP4312B/D1	95.3	405
41b	22	399.0	Bent	XP4312B/D1	98.4	402
42a	22	393.3	Bent	XP4312B/D1	101.6	400
42b	22	387.5	Bent	XP4312B/D1	104.8	399
43a	22	380.1	Bent	XP4312B/D1	108.8	402
43b	22	363.5	Bent	XP4312B/D1	112.0	395
44a	22	347.0	Bent	XP4312B/D1	114.9	389
44b	22	330.4	Bent	XP4312B/D1	118.1	384
45a	22	313.9	Bent	XP4312B/D1	121.4	381
45b	22	297.3	Bent	XP4312B/D1	124.7	378
46a	22	280.8	Bent	XP4312B/D1	128.0	377
46b	22	264.2	Bent	XP4312B/D1	131.4	378
47a	15	246.8	Straight	XP2262	134.2	379
47b	15	235.4	Straight	XP2262	136.5	380
48a	15	224.0	Straight	XP2262	138.8	383
48b	15	212.7	Straight	XP2262	141.0	385

WB Weinstein, Lawrence B. <lweinste@odu.edu>
To: Carlos Ayerbe Gayoso
Cc: lad_hallc@jlab.org
Thu 12/21/2023 12:12 PM

Dear Carlos,

There are 57 scintillators in one sector of CLAS6. They are numbered in the NIM paper from 1 to 39, and then from 40a to 48b. Numbers 40 to 48 have two scintillators each. We have panels 3 and 4 in the ESB. The smaller panel (#4) has 12 scintillators and covers 43a-48b. The larger panel (#3, which we are using) has 11 bars and covers 35-39 and 40a-42b.

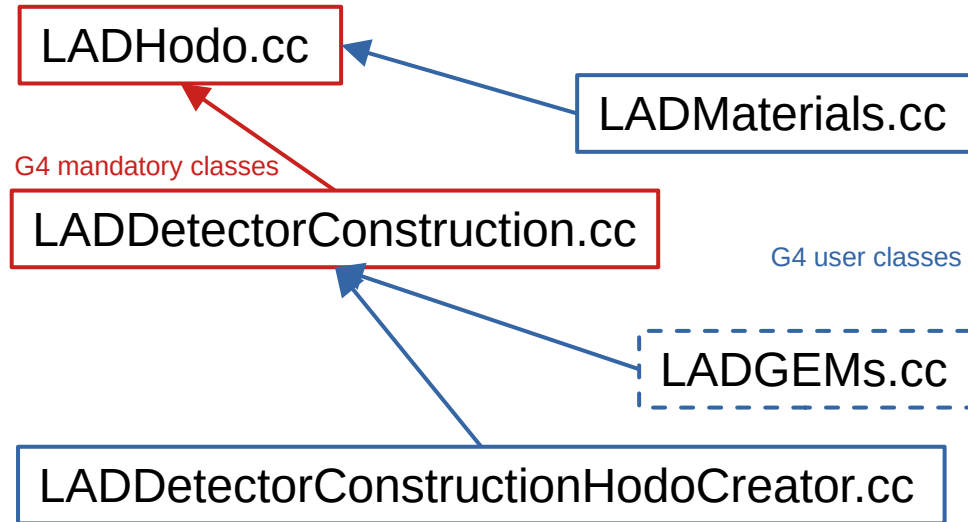Let me know if you have other question.

- Larry

Software Update

Started the detector construction in Geant4 of the Hodoscope.
Very simple for the moment, just BC408 material and no separation between bars.
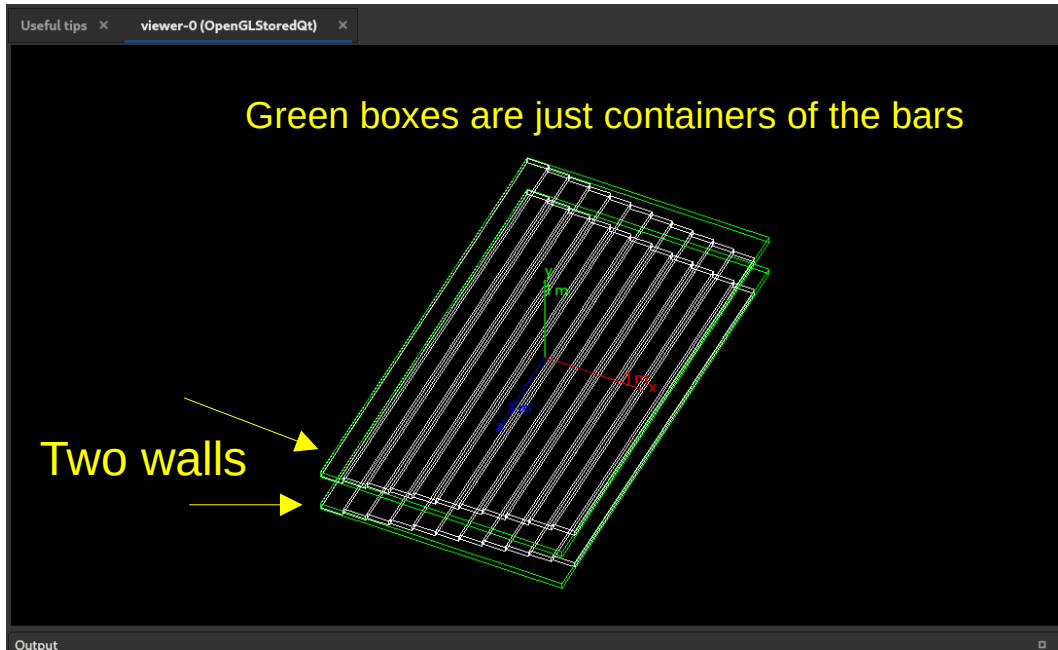
I am just working in the Hodo geometry, separating the Hodo construction class from the G4 mandatory DetectorConstruction class, allowing later to plug other detector (e.g. GEMs) easily, or move to another simulation.

Useful tips × viewer-0 (OpenGLStoredQt) ×

Green boxes are just containers of the bars

Two walls

Output

LADHodo.cc

LADMaterials.cc

G4 mandatory classes

LADDetectorConstruction.cc

G4 user classes

LADGEMs.cc

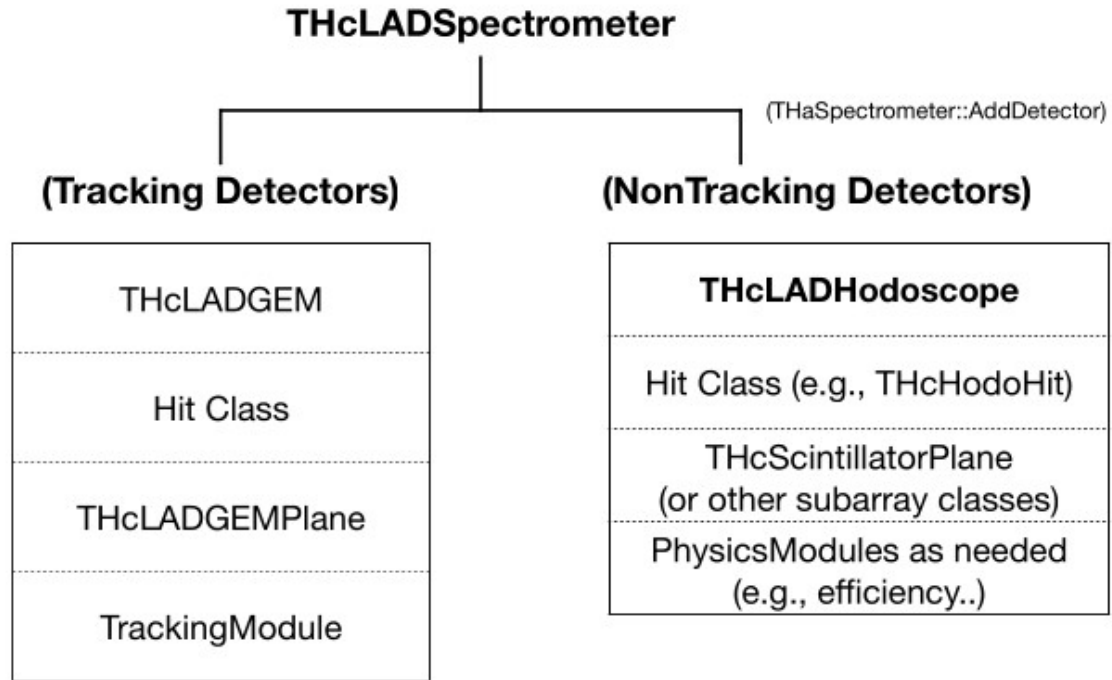LADDetectorConstructionHodoCreator.cc

Software Update

I haven't started with the Hcana decoder, but we already had meetings and guidance from Sanghwa Park.

We already have a github repository with the skeleton of the library to be developed, based in the HMS hodo

https://github.com/JeffersonLab/LADlib

THcLADSpectrometer

(THaSpectrometer::AddDetector)

(Tracking Detectors)   **(NonTracking Detectors)**

THcLADGEM
Hit Class
THcLADGEMPlane
TrackingModule

THcLADHodoscope
Hit Class (e.g., THcHodoHit)
THcScintillatorPlane (or other subarray classes)
PhysicsModules as needed (e.g., efficiency..)

SBS tracking detectors: Used a standalone base class (SBSGEMTrackerBase) instead of inheriting from THa* classes.

Most of work to be done is track finding process

CoarseProcess (Scintillator hits processed here)
FineProcess (Track projection)

Sanghwa Park