



Jefferson Lab Alignment Group

Data Transmittal

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Checked: SEH

: B1721

DETAILS:

data: step2b\hallb\prad\160601

The HyCal calorimeter and GEM detectors were located and aligned on May 31st, 2016. The HyCal was located using the fiducialized data from the 2004 fiducialization of the lead glass shower detectors. For the GEM detector, the alignment crew was asked to locate the bolt locations as shown below. The bolts are the locations, projected to the as-found plane.

The as-found coordinates are referenced to the CEBAF coordinate system in meters. A distance upstream along Z to the hall B center (not 12 GeV target) is also shown as Z-dist*. The beam following coordinates for x and y are shown in millimeters for HyCal. Angular deltas from ideal are shown for HyCal and the as-found planes (no roll for the planes). Only 2 bolts on the beam left GEM detector could be observed due to obstructions.

target	As – found Cebaf Coordinates [m]			Z-dist *	Bfs [mm]		Angles [degrees]		
	x	y	z		dx bfs	dy bfs	dyaw	dpitch	droll
HyCal	-80.59993	103.35537	-391.45967	-8.63513	0.0700	0.1060	0.0003	0.0072	0.0118
GEM detector Beam Left									
Plane							-0.1566	0.0718	
Bolt bot-left	-81.1393	102.7057	-390.9489	-9.14588					
Bolt top-left	-81.1374	104.0043	-390.9473	-9.14751					
GEM detector Beam Right									
Plane							0.0939	0.0453	
Bolt top-right	-80.0651	104.0043	-390.9078	-9.18703					
Bolt top-left	-80.6308	104.0049	-390.9068	-9.18796					
Bolt bot-right	-80.0663	102.7043	-390.9088	-9.18601					
Bolt bot-left	-80.6321	102.7046	-390.9079	-9.18693					