Jefferson Lab Alignment Group

Data Transmittal

TO: D. Kashy		**DATE:** 18 Nov 2015
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DETAILS: data: inspection\hallb\torus12g\151103a\torus_12g_kt.xit64

Based on the November 2015 Torus surveys, angles to the outer coil fiducial points were determined from the calculated hub center line. A coordinate system based on the hub line as the primary axis and coil A's downstream fiducial to the hub line as the secondary axis was established. This coordinate frame was then used to determine the resulting 'twist' of the coils with respect to A_DS being at 0.0000 degrees. The third column shows the angular difference between upstream to downstream fiducials in this frame. The last column displays the resulting delta taking the Z distance (along the primary axis) between the upstream/downstream points and the sin value of the 'twist' angle. Results are shown below in degrees except the distance deltas which are in millimeters.

Point	wrt A_DS	wrt_us/ds	Dist delta (mm)
A_DS	0.0000°		
A_US	0.0009°	0.0009°	0.01
B_DS	60.0134°		
B_US	60.0254°	0.0120°	0.20
C_DS	120.0090°		
C_US	120.0316°	0.0226°	0.37
D_DS	179.9937°		
D_US	180.0123°	0.0186°	0.30
E_DS	239.9869°		
E_US	239.9773°	-0.0096°	-0.16
F_DS	299.9863°		
F_US	299.9792°	-0.0071°	-0.12