



Jefferson Lab Alignment Group

Data Transmittal

TO: T. Maruta, N. Nakamura

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FROM: J. Dahlberg

Checked:

: C1251

DETAILS:

Data: Step2b\HallC\Hes_Hks\091118a, 091119a

Below are the results of the HKS/HES collimator surveys performed on November 18 and 19, 2009. The coordinate system (in millimeters), for the HES spectrometer is centered on Q1. The coordinate system for HKS is centered at the downstream face of the splitter magnet on the outgoing beam line. A +X is to the beam left, a +Z is downstream, and a +Y is up. The HKS measurements are to the downstream face of the collimators. The HES sieve measurements are to the upstream face. The HES large aperture measurements are to the inside bottom surface and were only located in the Y direction.

Note: During this post run survey, it was found that the HES Q1 had moved relative to the collimator since the April 29th sieve slit calibration survey (DT#C1232). The collimator box is attached directly to the spectrometer vacuum chamber and the quads had moved slightly when the spectrometer was lifted hydraulically and with bottle jacks into the final position in May. At the time of the April 29th sieve calibration survey relative to Q1, it was thought that the dipole and quad assembly would be rigid.

| LOCATION | | Z | X | Y |
|---------------------|-------------------------|---------|---------|--------|
| HKS SIEVE SLIT: | Beam left hole | 172.20 | 62.67 | 0.38 |
| | Bottom hole | 172.42 | -1.62 | -64.67 |
| | Beam right hole | 172.39 | -82.90 | -0.44 |
| | Top hole | 172.15 | -2.32 | 64.73 |
| | Center hole | 172.29 | -1.99 | 0.04 |
| HKS LARGE APERTURE: | Corner 1 | 172.10 | 24.74 | 76.36 |
| | Corner 2 | 172.18 | 73.53 | 28.05 |
| | Corner 3 | 172.37 | 73.79 | -25.93 |
| | Corner 4 | 172.64 | 25.47 | -74.72 |
| | Corner 5 | 172.75 | -28.52 | -75.00 |
| | Corner 6 | 172.69 | -88.10 | -26.73 |
| | Corner 7 | 172.49 | -88.36 | 27.26 |
| | Corner 8 | 172.20 | -29.26 | 76.09 |
| | Center | 172.43 | -7.28 | 0.65 |
| HES SIEVE SLIT: | Beam right hole | -447.88 | -94.47 | 0.46 |
| | Center hole | -447.83 | 0.77 | 0.24 |
| | Beam left hole | -447.79 | 96.03 | 0.01 |
| | Beam right hole 12.7 | -447.86 | -94.45 | 13.10 |
| | Center hole 12.7 | -447.82 | 0.81 | 12.87 |
| | Beam left hole 12.7 | -447.77 | 96.02 | 12.68 |
| HES LARGE APERTURE: | Bottom beam right | -443.04 | -102.27 | -48.85 |
| | Bottom beam left | -441.64 | 91.47 | -48.92 |
| | Bottom beam right 300.2 | -445.04 | -95.98 | -76.54 |
| | Bottom beam left 300.2 | -437.69 | 107.36 | -76.54 |
| | Bottom beam right 330.2 | -444.50 | -102.66 | -46.67 |
| | Bottom beam left 330.2 | -441.14 | 107.02 | -46.67 |
| | Bottom beam right 347.2 | -440.75 | -102.90 | -29.75 |
| | Bottom beam left 347.2 | -441.26 | 98.77 | -29.73 |