



# Jefferson Lab Alignment Group

## Data Transmittal

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**DATE:** 08/03/2017

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**Checked:** SEH

**# :** C1806r

**DETAILS:**

data: aalign\shms\s20170803

Below are the results from the survey of SHMS spectrometer August 3<sup>rd</sup>, 2017. The SHMS fiducial points were observed from the beam right side only.

The horizontal pointing value shows how much the central axis of the spectrometer misses the ideal target. This value is perpendicular to the spectrometer axis, not along the beam line. For the vertical pointing, a positive value indicates that the spectrometer is pointing above the target.

===== RESULTS ===== S20170803

The central ray of the spectrometer is at -18.018 degrees  
FOR SHMS REPORTING angle is : 15.0179 degrees  
The central ray is missing the defined target center by 0.38 [mm] Upstream  
and 1.16 mm vertically [positive value is up]

Bender RotZ (roll) = 0.00383 degrees  
Bender RotX (pitch) = 0.03154 degrees  
Bender RotY (yaw) = 125.89296 degrees  
Bender Rotation wrt Hall C Zero Azimuth = 16.59136 degrees  
Bender Calc A posteriori value= 0.050 millimeters

9 Par A posteriori value : 0.64 (mm)

Sketch for the data is shown on the next page.

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S20170803

- Beam-Spec Intercept Point
- Beam-Spec Perpendicular Point
- Spectrometer Projected Target Point
- ✕ Straight-Ahead Target Point [ideal]

angles: delta : 18.01789 [degrees]  
beam : -142.48325 [degrees]  
spectrometer: 235.53464 [degrees]

perpendicular distance : 0.379 [mm]  
target - intersect dis : 1.226 [mm]  
found target - intersect dis : 1.718 [mm]  
Spectrometer is 1.16 higher than ideal target [mm]

- Spectrometer Line
- Straight-Ahead Beam
- Perpendicular line

SHMS CASE :  
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Bender Reporting Angle : 15.01789 [degrees]  
Bender Rotation wrt Hall C Zero Az = 16.59136 [deg]

