



Jefferson Lab Alignment Group

Data Transmittal

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DETAILS

data: aalign\shms\2018\ M081018_S081018 & S081318

Below are the results from the surveys of HMS and SHMS spectrometers on August 10th, and 13th, 2018.

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 ===== M081018

The central ray of the spectrometer is at 65.002 degrees
The central ray is missing the defined target center by 3.32 [mm] Upstream
and -1.22 mm vertically [positive value is up]

9 Par A posteriori value : 0.41 (mm)

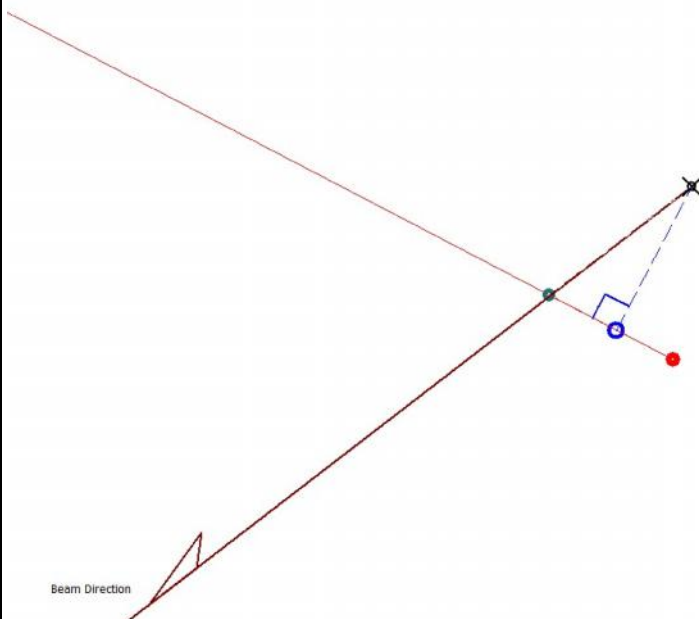
M081018

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

angles: delta : 65.00205 [degrees]
beam : -142.48325 [degrees]
spectrometer: 152.51470 [degrees]

perpendicular distance : 3.316 [mm]
target - intersect dis : 3.659 [mm]
found target - intersect dis : 2.843 [mm]
Spectrometer is -1.22 lower than ideal target [mm]

- Spectrometer Line
- Straight-Ahead Beam
- Perpendicular line



Beam Direction

===== RESULTS ===== M081018_S081018

The central ray of the spectrometer is at -23.001 degrees

FOR SHMS REPORTING angle is : 20.0008 degrees

The central ray is missing the defined target center by 0.60 [mm] Downstream
and -0.13 mm vertically [positive value is up]

Bender RotZ (roll) = 0.00400 degrees
Bender RotX (pitch) = -0.01452 degrees
Bender RotY (yaw) = 120.87629 degrees
Bender Rotation wrt Hall C Zero Azimuth = 21.60803 degrees
Bender Calc A posteriori value= 0.043 millimeters

9 Par A posteriori value : 0.20 (mm)

SHMS - Aug 10, 2018

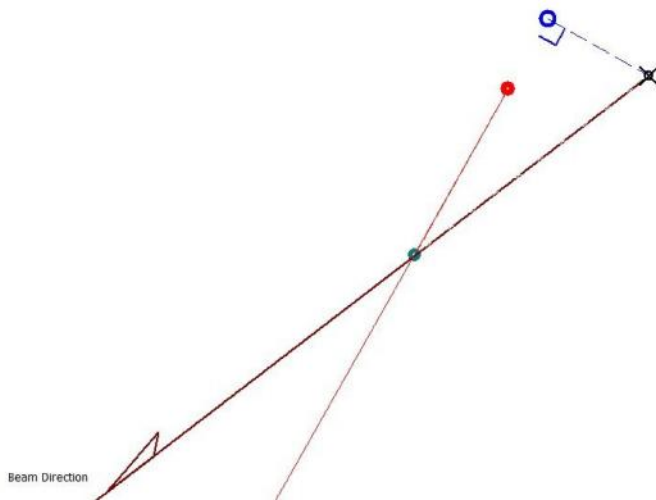
- Beam-Spec Intercept Point
- Beam-Spec Perpendicular Point
- Spectrometer Projected Target Point
- ✕ Straight-Ahead Target Point [ideal]

angles: delta : 23.00080 [degrees]
beam : -142.48325 [degrees]
spectrometer: 240.51755 [degrees]
perpendicular distance : 0.592 [mm]
target - intersect dis : 1.516 [mm]
found target - intersect dis : 0.980 [mm]
Spectrometer is -0.13 lower than ideal target [mm]

- Spectrometer Line
- Straight-Ahead Beam
- Perpendicular line

SHMS CASE :

Bender Reporting Angle : 20.00080 [degrees]
Bender Rotation wrt Hall C Zero Az = 21.60803 [deg]



===== RESULTS ===== S081318

The central ray of the spectrometer is at -13.000 degrees

FOR SHMS REPORTING angle is : 10.0002 degrees

The central ray is missing the defined target center by 1.48 [mm] Upstream
and 0.13 mm vertically [positive value is up]

Bender RotZ (roll) = 0.00450 degrees
Bender RotX (pitch) = -0.01642 degrees
Bender RotY (yaw) = 130.88531 degrees
Bender Rotation wrt Hall C Zero Azimuth = 11.59901 degrees
Bender Calc A posteriori value= 0.027 millimeters

9 Par A posteriori value : 0.17 (mm)

