



Jefferson Lab Alignment Group

Data Transmittal

TO: M. Jones, B. Sawatzky, D. Gaskel, S. Lassiter, M. Fowler

DATE: 01/02/2018

FROM: Kelly Tremblay

Checked:

: C1842

DETAILS

data: aalign\hms\2017\ hc_hms_102617,h20170809_1,hms_20170519,h20170809,h20170808

Below are the results from the surveys of HMS spectrometer carried out on various dates in 2017.

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.

2017.05.19 ===== RESULTS ===== HC_12_20170519

The central ray of the spectrometer is at 40.534 degrees
The central ray is missing the defined target center by -3.37 [mm] Upstream
and -3.47 mm vertically [positive value is up]

9 Par Aposter Val : 0.51 (mm)

HC_12_20170519

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

angles: delta : 40.53382 [degrees]

beam : -142.48325 [degrees]

spectrometer: 176.98293 [degrees]

perpendicular distance : 3.372 [mm]

target - intersect dis : 5.188 [mm]

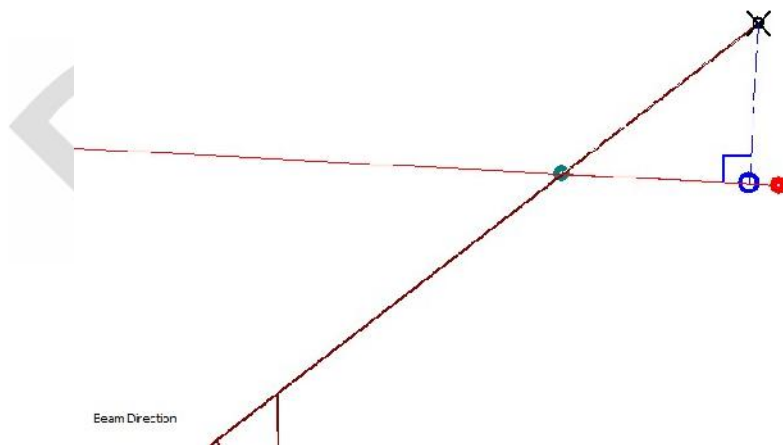
found target - intersect dis : 4.571 [mm]

Spectrometer is -3.47 lower than ideal target [mm]

Spectrometer Line

Straight-Ahead Beam

Perpendicular line







2017.08.08 ===== RESULTS ===== H20170808

The central ray of the spectrometer is at 25.015 degrees
The central ray is missing the defined target center by -1.95 [mm] Downstream
and -3.36 mm vertically [positive value is up]

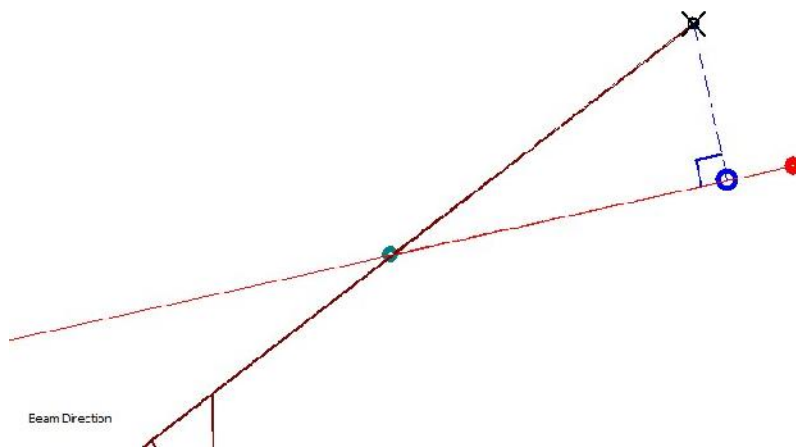
9 Par Aposter Val : 0.59 (mm)




H20170808

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

angles: delta : 25.01532 [degrees]
beam : -142.48325 [degrees]
spectrometer: 192.50143 [degrees]

perpendicular distance : 1.955 [mm]
target - intersect dis : 4.624 [mm]
found target - intersect dis : 5.016 [mm]
Spectrometer is -0.86 lower than ideal target [mm]



-  Spectrometer Line
-  Straight-Ahead Beam
-  Perpendicular line

2017.08.09 am ===== RESULTS ===== H20170809

The central ray of the spectrometer is at 15.008 degrees
The central ray is missing the defined target center by -1.37 [mm] Downstream
and -3.80 mm vertically [positive value is up]

9 Par Aposter Val : 0.76 (mm)

Sketch on following page:

H20170809

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

angles: delta : 15.00783 [degrees]

beam : -142.48325 [degrees]

spectrometer: 202.50852 [degrees]

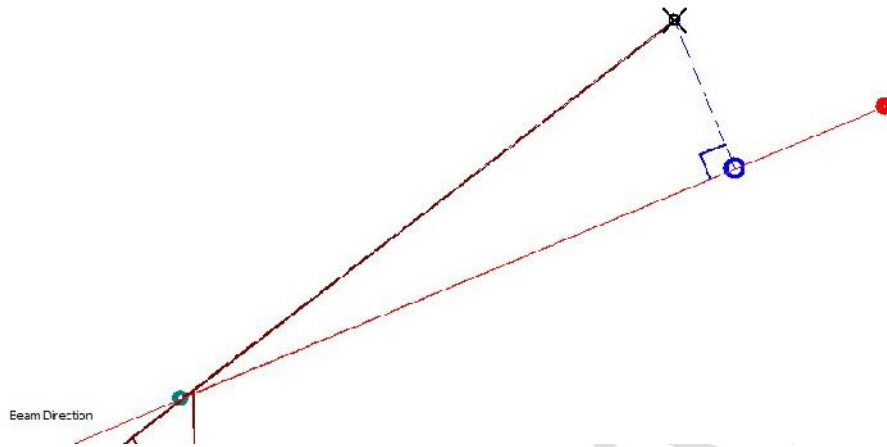
perpendicular distance : 1.373 [mm]

target - intersect dis : 5.301 [mm]

found target - intersect dis : 6.500 [mm]

Spectrometer is -1.30 lower than ideal target [m]

- Spectrometer Line
- Straight-Ahead Beam
- Perpendicular line







2017.08.09 pm ===== RESULTS ===== H20170809_1

The central ray of the spectrometer is at 15.009 degrees
The central ray is missing the defined target center by -1.35 [mm] Downstream
and -3.75 mm vertically [positive value is up]

9 Par Aposte Val : 0.76 (mm)

Sketch on following page:

H20170809_1

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

angles: delta : 15.00855 [degrees]

beam : -142.48325 [degrees]


spectrometer: 202.50820 [degrees]


perpendicular distance : 1.349 [mm]


target - intersect dis : 5.209 [mm]

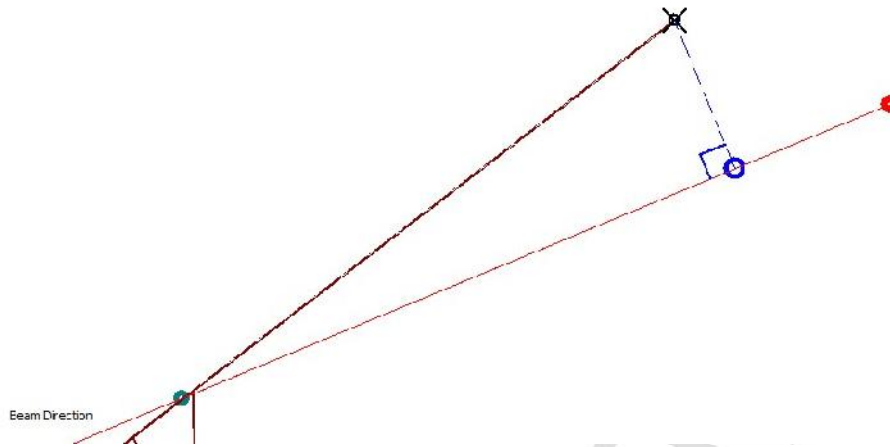
found target - intersect dis : 6.431 [mm]

Spectrometer is -1.25 lower than ideal target [m]

 Spectrometer Line

 Straight-Ahead Beam

 Perpendicular line



2017.10.26 ===== RESULTS ===== HC_HMS_20171026





The central ray of the spectrometer is at 215.946 degrees

The central ray is missing the defined target center by 2.87 [mm] Upstream
and -3.24 mm vertically [positive value is up]

9 Par A posteriori value : 0.81 (mm)

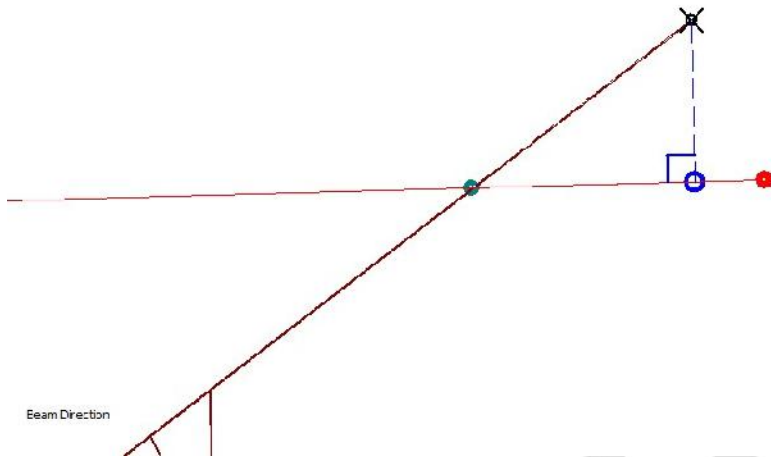
Sketch on following page:

HC_12_20171026

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

angles: delta : 35.94554 [degrees]
beam : -142.48325 [degrees]
spectrometer: 181.57121 [degrees]

perpendicular distance : 2.875 [mm]
target - intersect dis : 4.898 [mm]
found target - intersect dis : 5.207 [mm]
Spectrometer is -0.74 lower than ideal target [mm]



— Spectrometer Line
— Straight-Ahead Beam
— Perpendicular line

Prelim