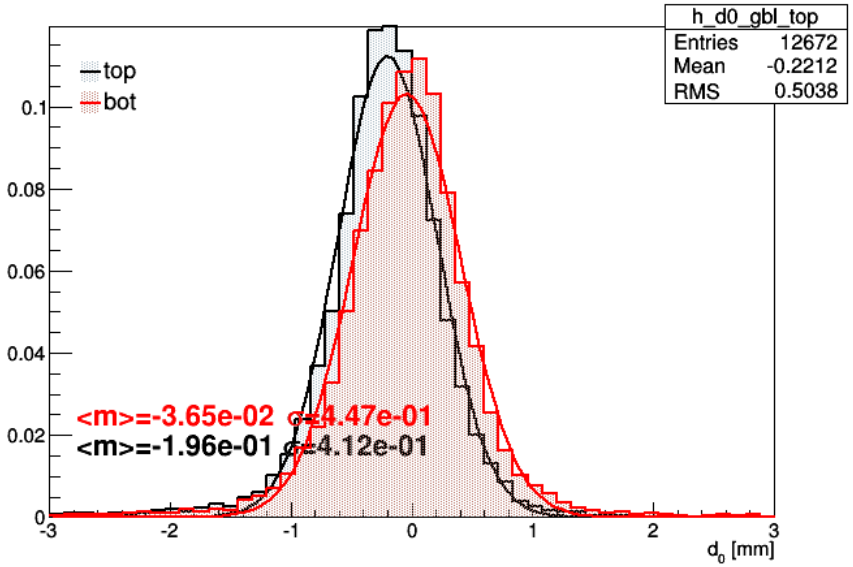
Alignment: beamspot update

Per Hansson Adrian 10/20/2015

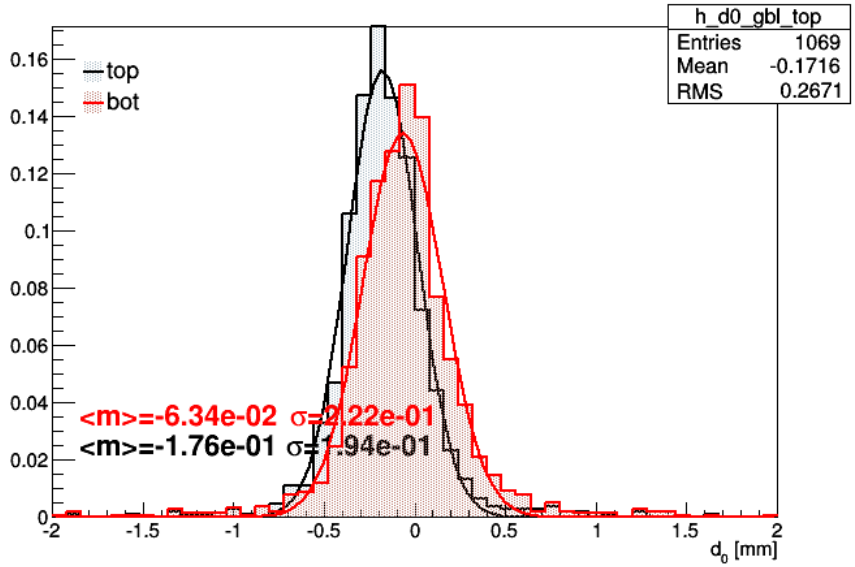
Beamspot

Adjust beamspot sensors origin to average b/w top and bottom in z0 and d0

<beamspotScatAngle>0.005</beamspotScatAngle>
<beamspotWidthZ>0.05</beamspotWidthZ>
<beamspotWidthY>0.2</beamspotWidthY>
<beamspotTiltZOverY>0.26</beamspotTiltZOverY>
<beamspotPosition>0.0 -0.11 -0.05</beamspotPosition>



Diff= 159.5um

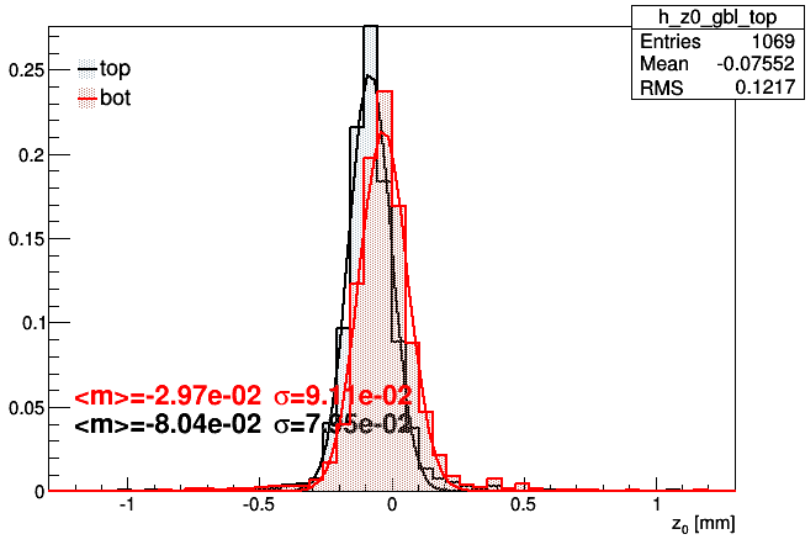


Diff= 112.6um

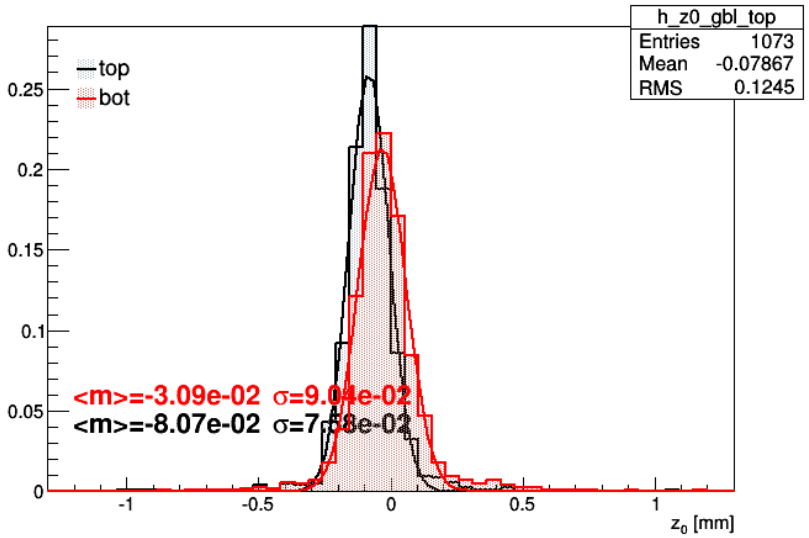
Beamspot

Adjust beamspot sensors origin to average b/w top and bottom in z0 and d0

<beamspotScatAngle>0.005</beamspotScatAngle>
<beamspotWidthZ>0.05</beamspotWidthZ>
<beamspotWidthY>0.2</beamspotWidthY>
<beamspotTiltZOverY>0.26</beamspotTiltZOverY>
<beamspotPosition>0.0 -0.11 -0.05</beamspotPosition>



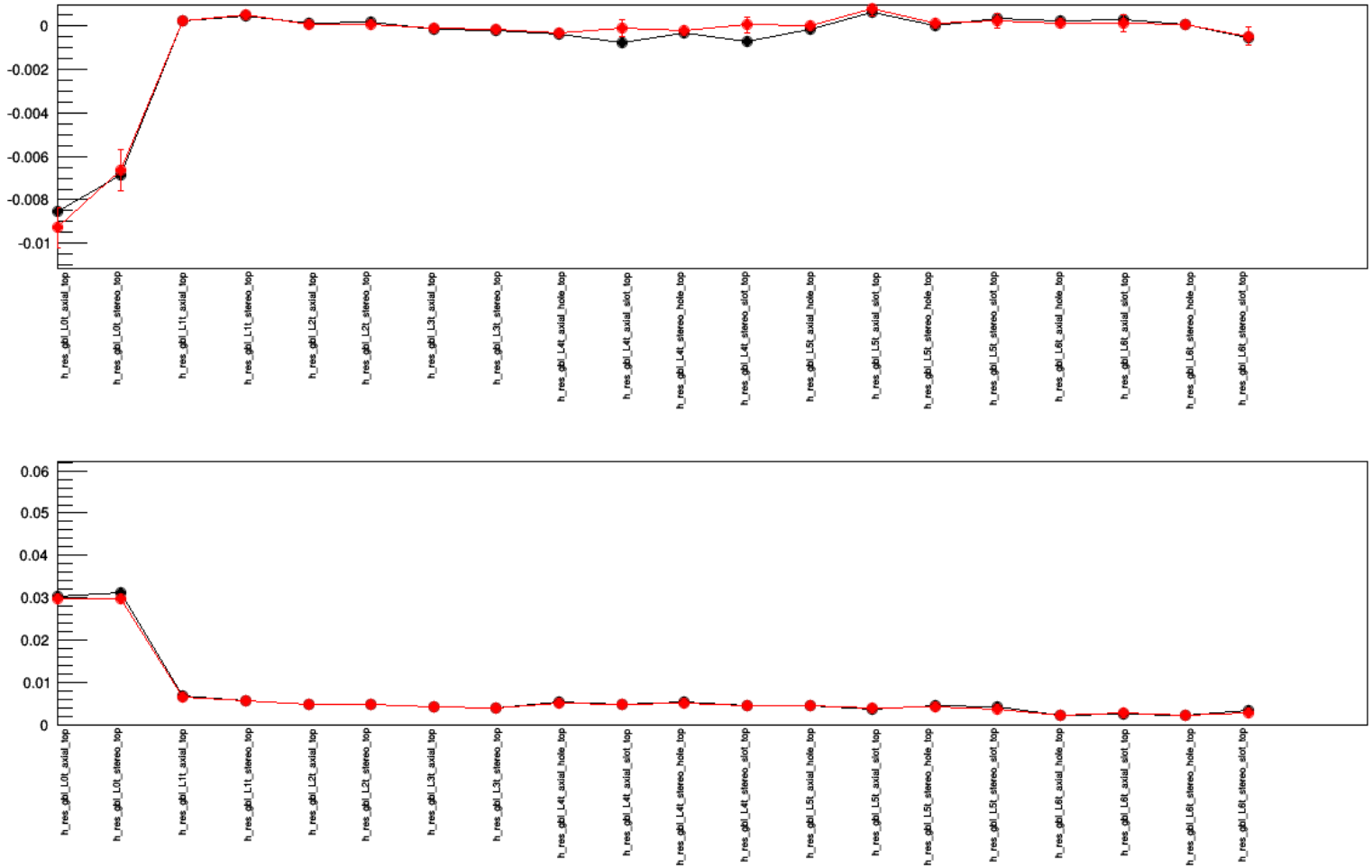
Diff= 50.7um



Diff= 49.8um

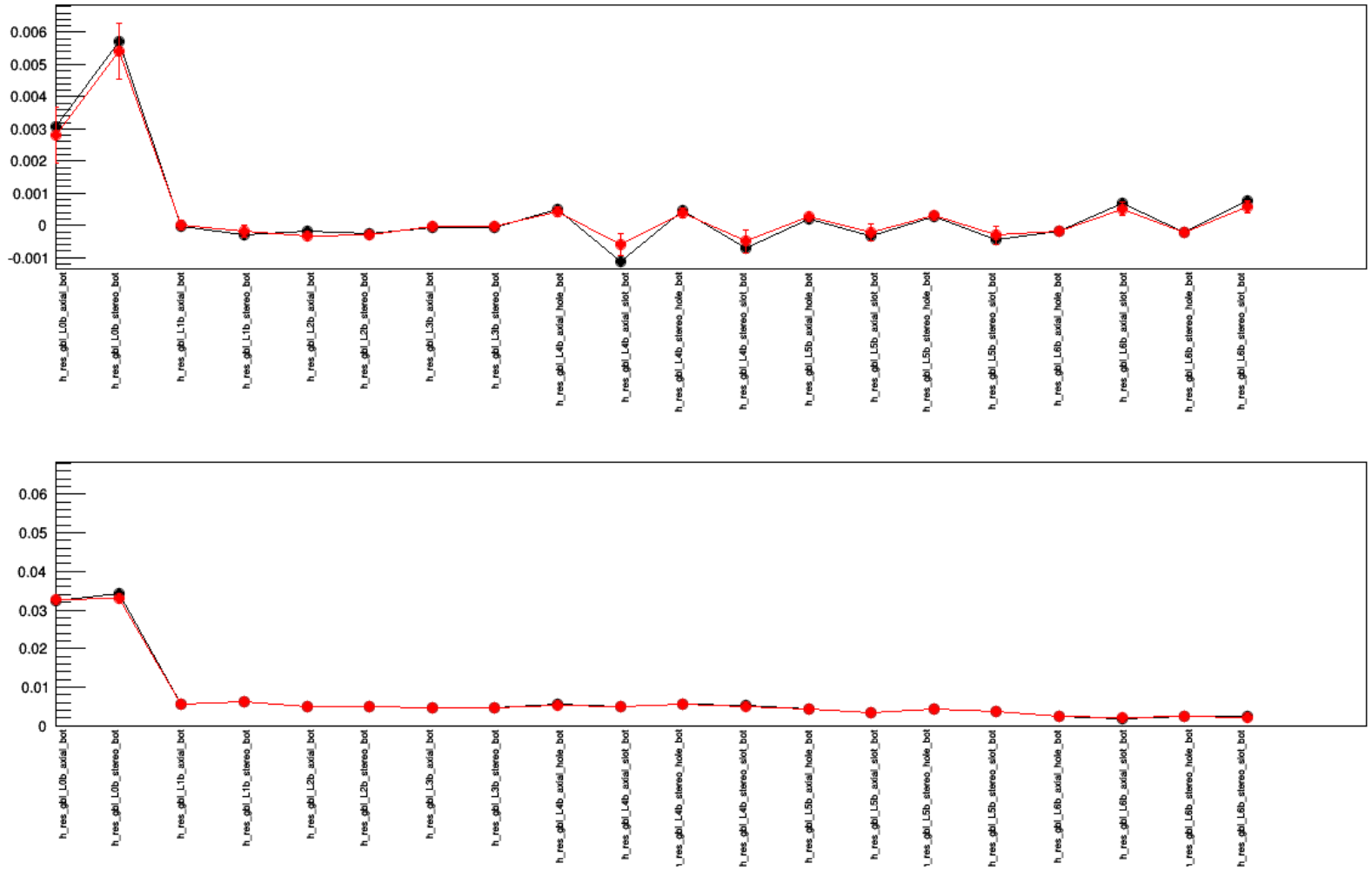
Residuals GBL

top



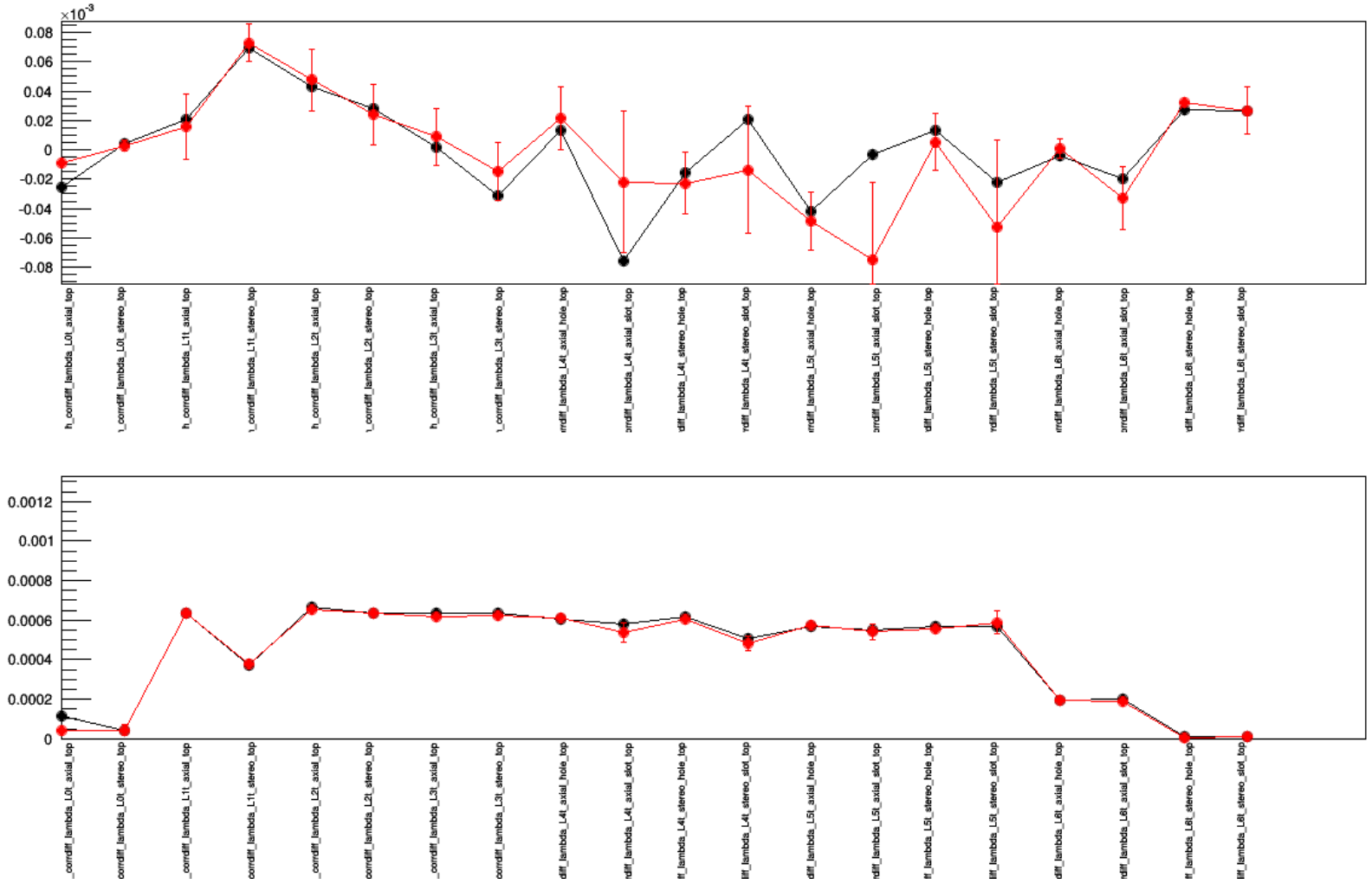
Residuals GBL

bottom



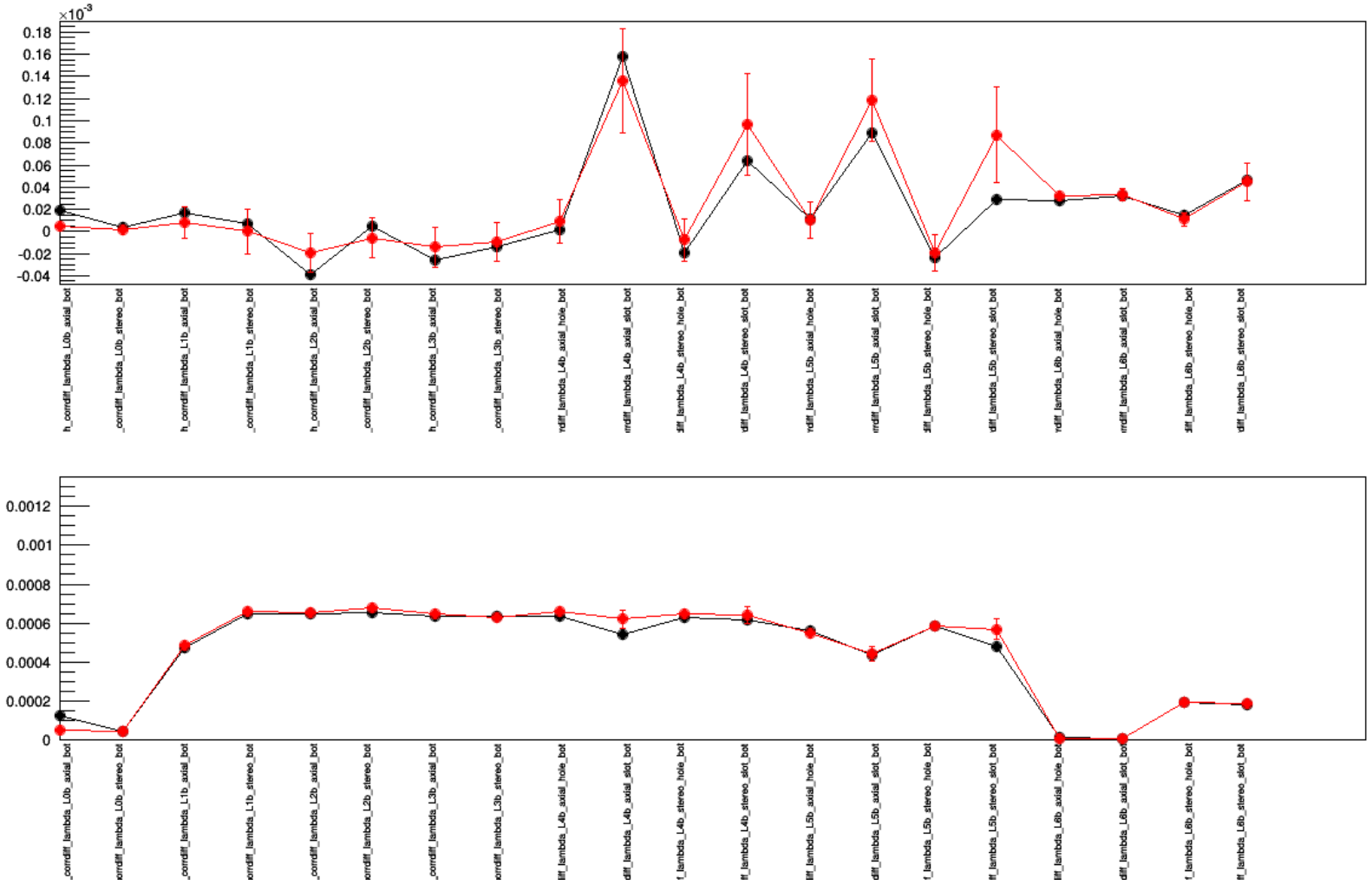
Kinks GBL

Top lambda



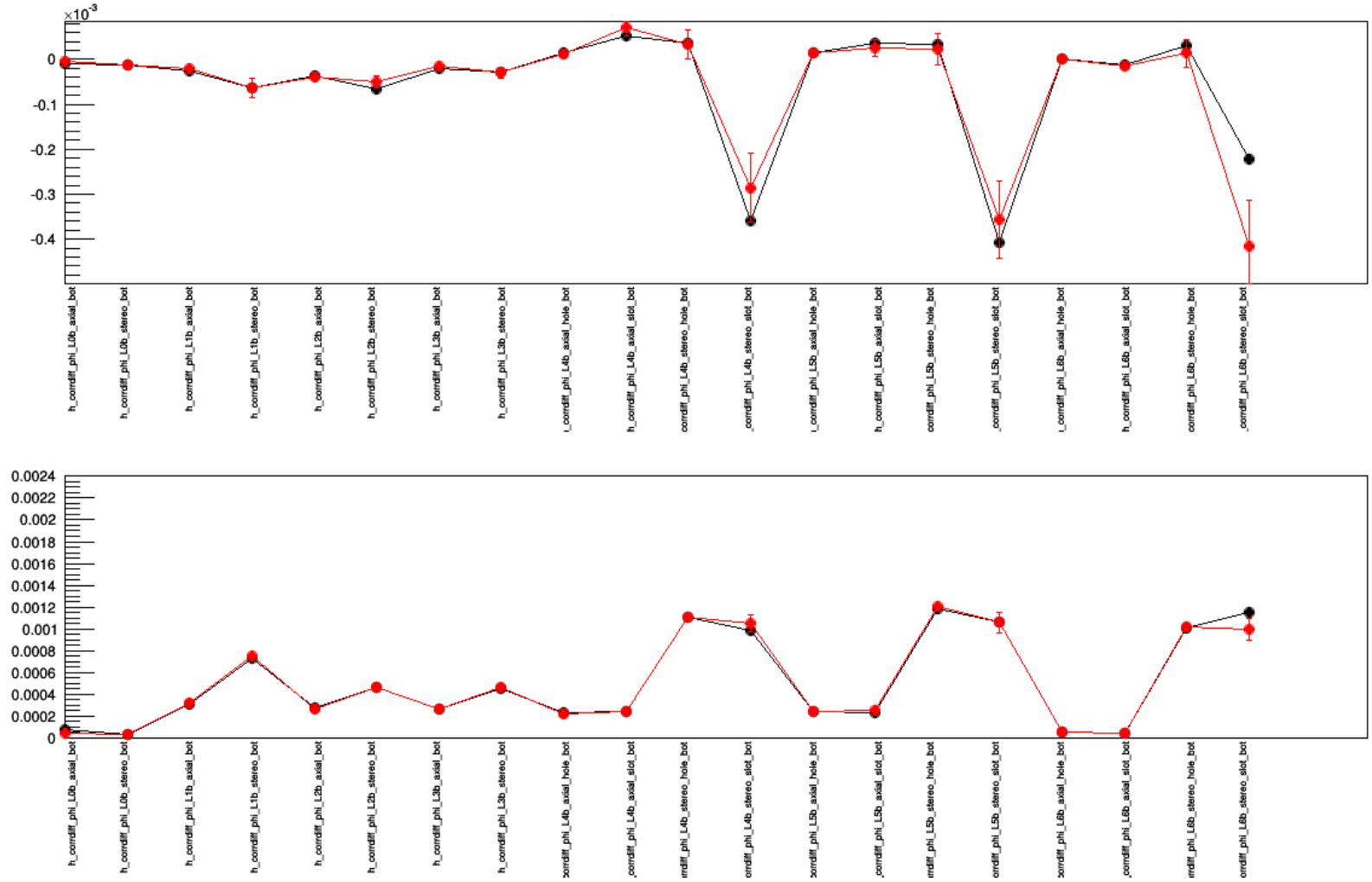
Kinks GBL

Bottom lambda



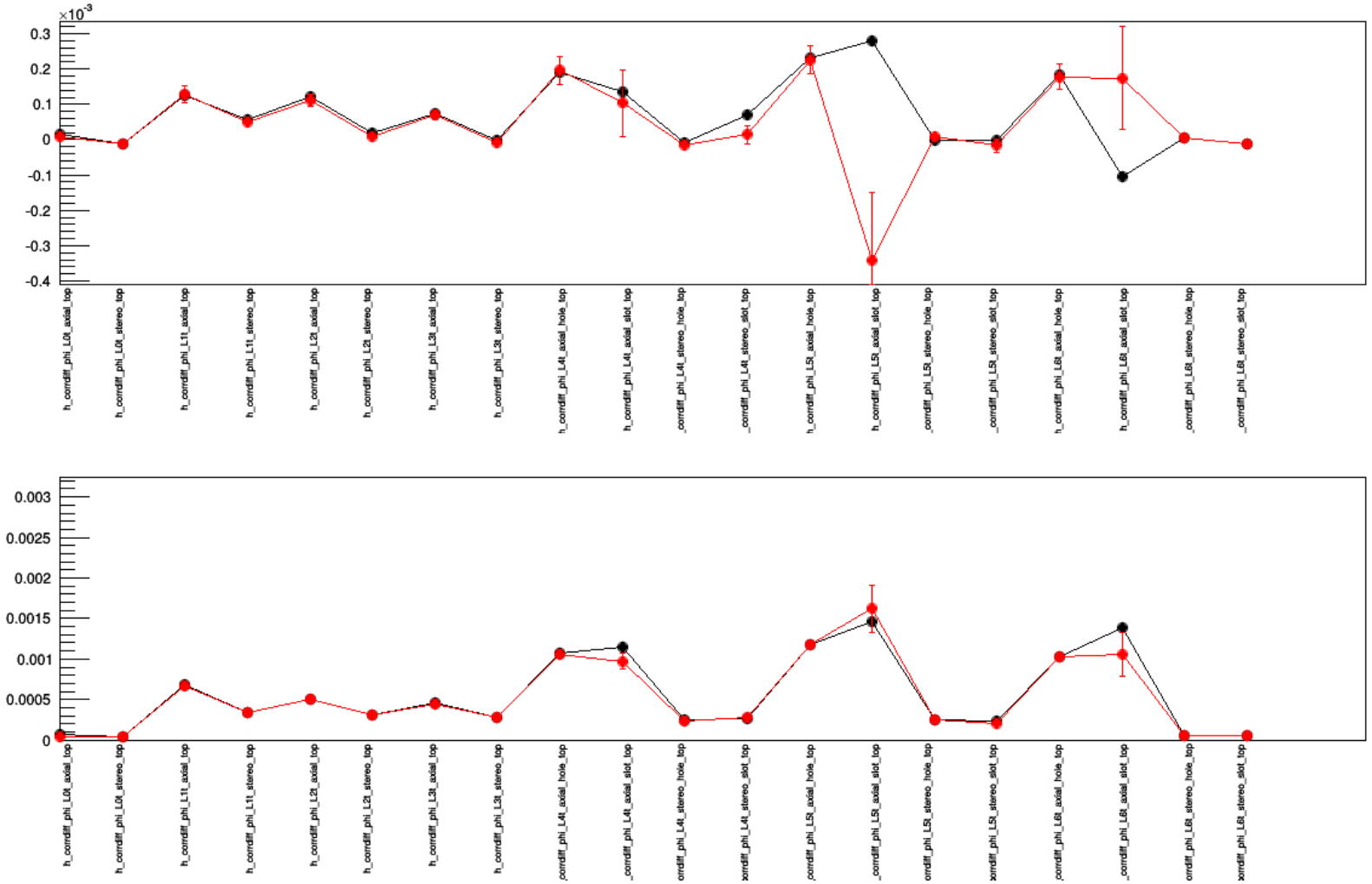
Kinks GBL

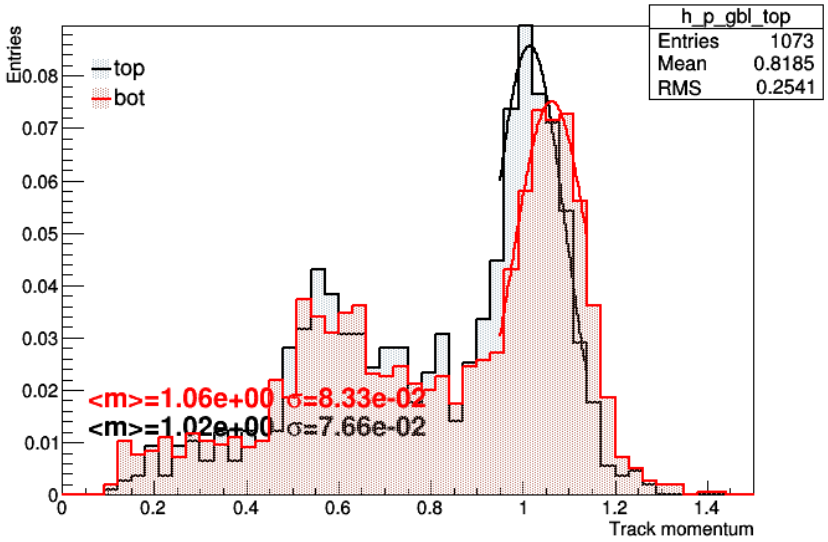
Bottom phi



Kinks GBL

Top phi




h_p_gbl_top
Entries 1073
Mean 0.8185
RMS 0.2541
top
bot
Entries
<m>=1.06e+00 σ=8.33e-02
<m>=1.02e+00 σ=7.66e-02
Track momentum

Beamspot alignment

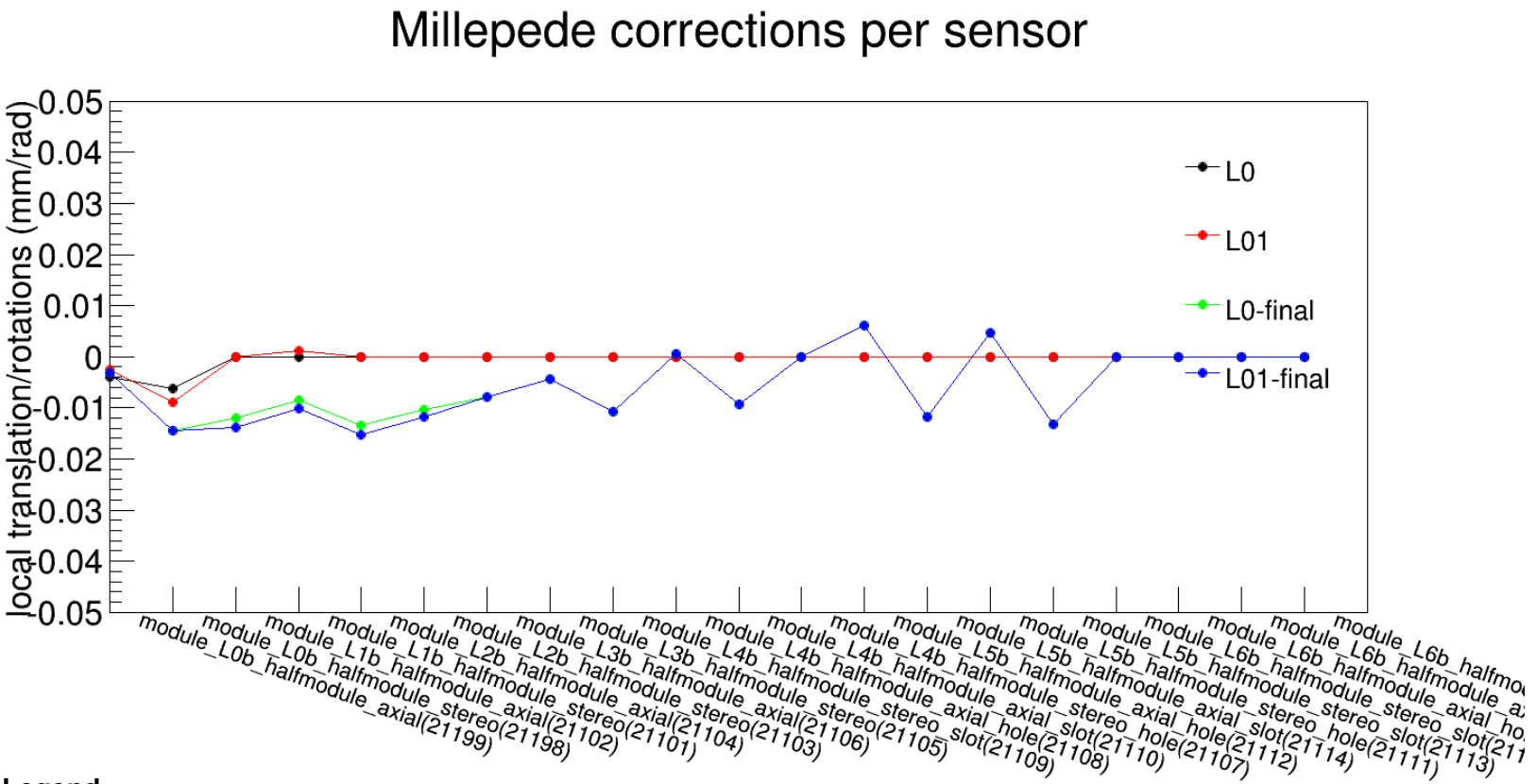
Millepede procedure

- Beamspot “constraint”: only one beamspot
  - I have one for top and bottom but constrain them to move identically
- Float beamspot and first few layers; u-translations only here
- Should cause tracks for top and bottom to want to point to the same beamspot

Legend
L0: Release only beamspot
L01: relase beamspot and L1
L0-final: L0_L01_L12_L23_L01_L12_L34_L45_L01
L-1-final: L01_L12_L23_L01_L12_L34_L45_L01_L12
where the last two has many iterations (each fed by the previous result).

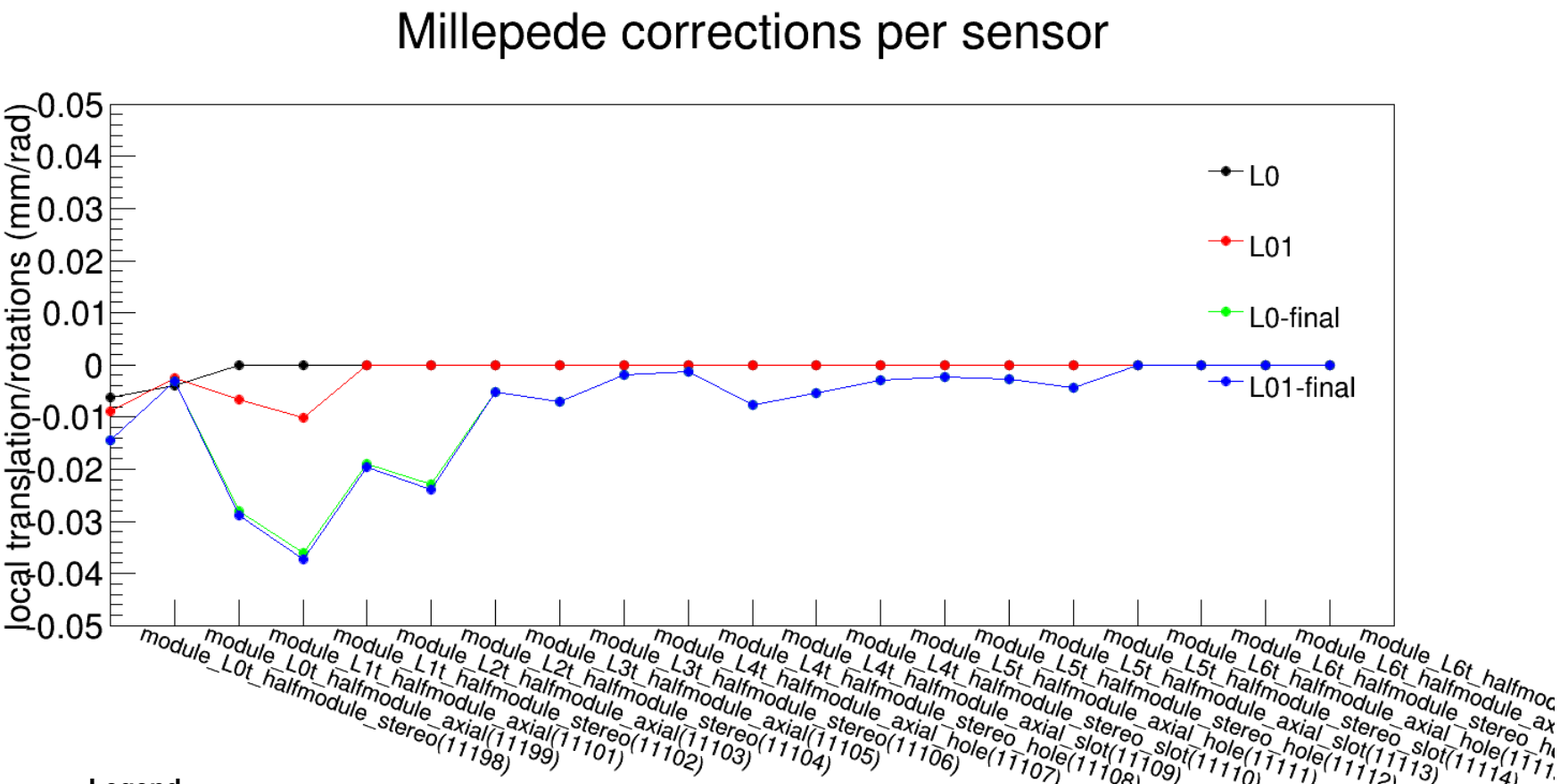
NOTE: I flip stereo-u corrections in the following plots
(makes it easier to interpret the global, although approx.)

Beamspot alignment



Legend
L0: Release only beamspot
L01: relase beamspot and L1
L0-final: L0_L01_L12_L23_L01_L12_L34_L45_L01
L-1-final: L01_L12_L23_L01_L12_L34_L45_L01_L12
where the last two has many iterations (each fed by the previous result).

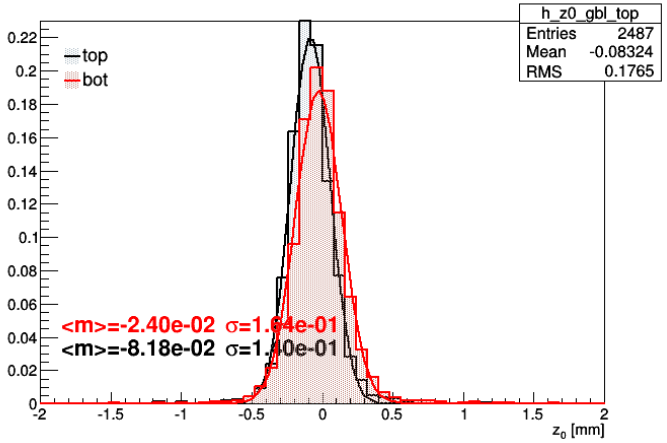
Beamspot alignment

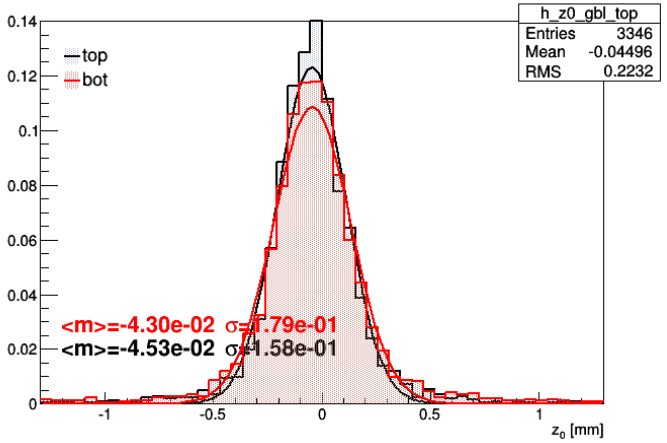


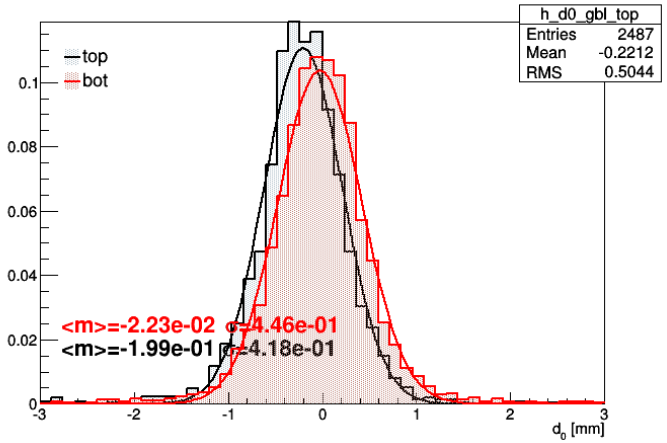
Legend
L0: Release only beamspot
L01: relase beamspot and L1
L0-final: L0_L01_L12_L23_L01_L12_L34_L45_L01
L-1-final: L01_L12_L23_L01_L12_L34_L45_L01_L12
where the last two has many iterations (each fed by the previous result).

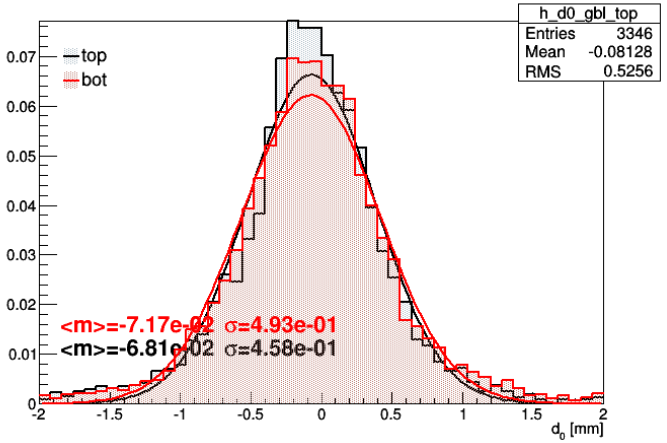
v3-4-fieldmap detector

Impact parameters now agree



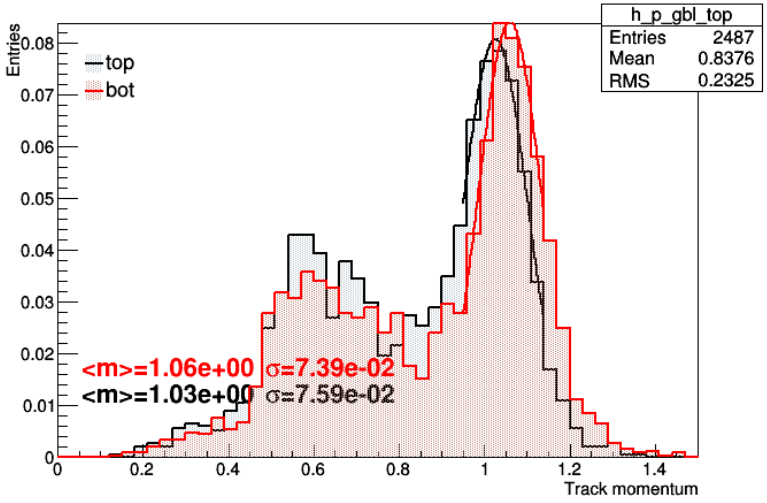


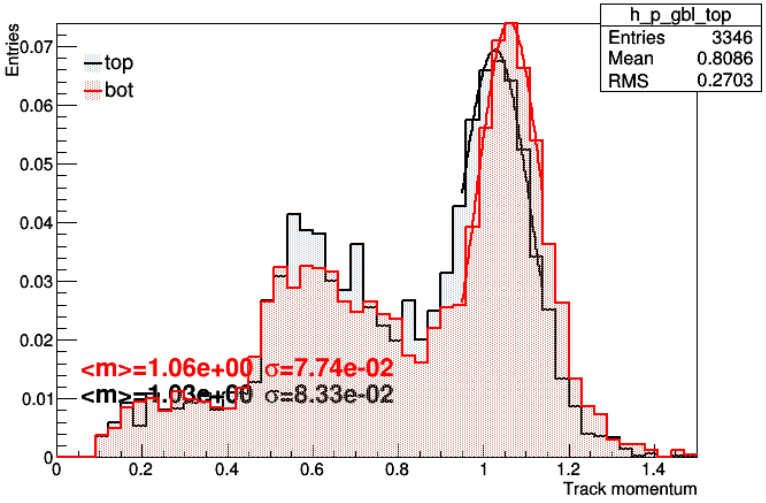




v3-4-fieldmap detector

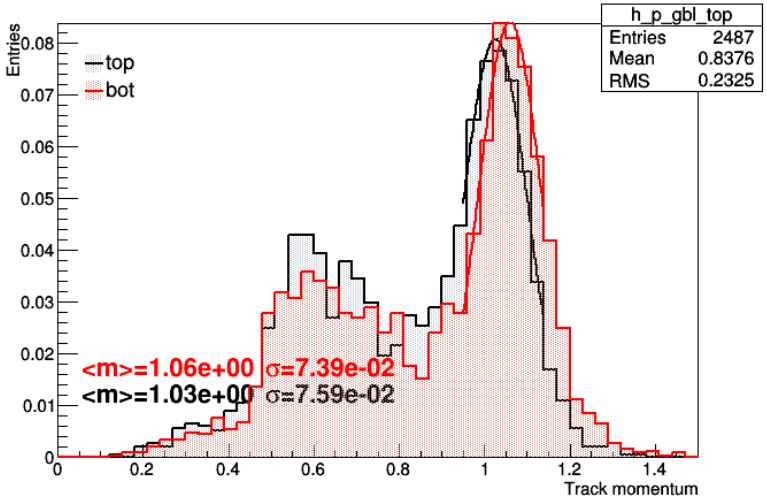
Fitted momentum reasonable

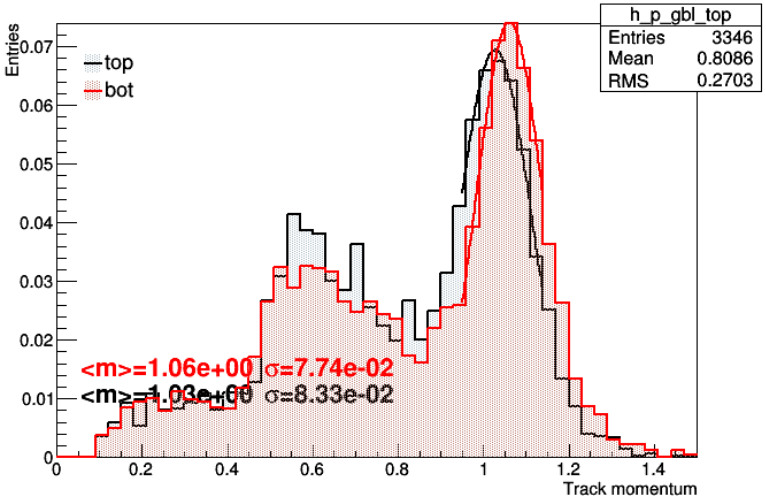




v3-4-fieldmap detector

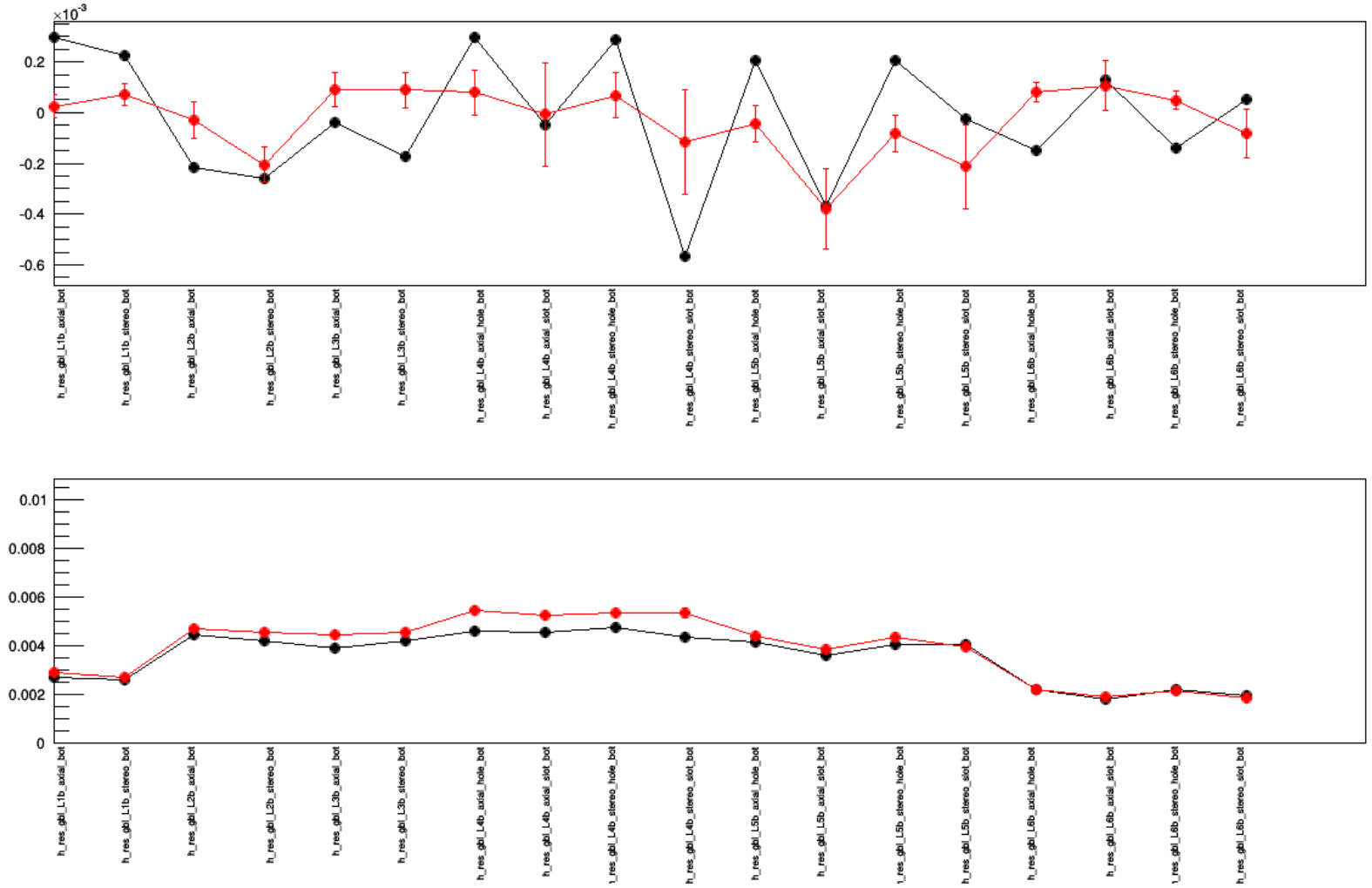
Fitted momentum reasonable





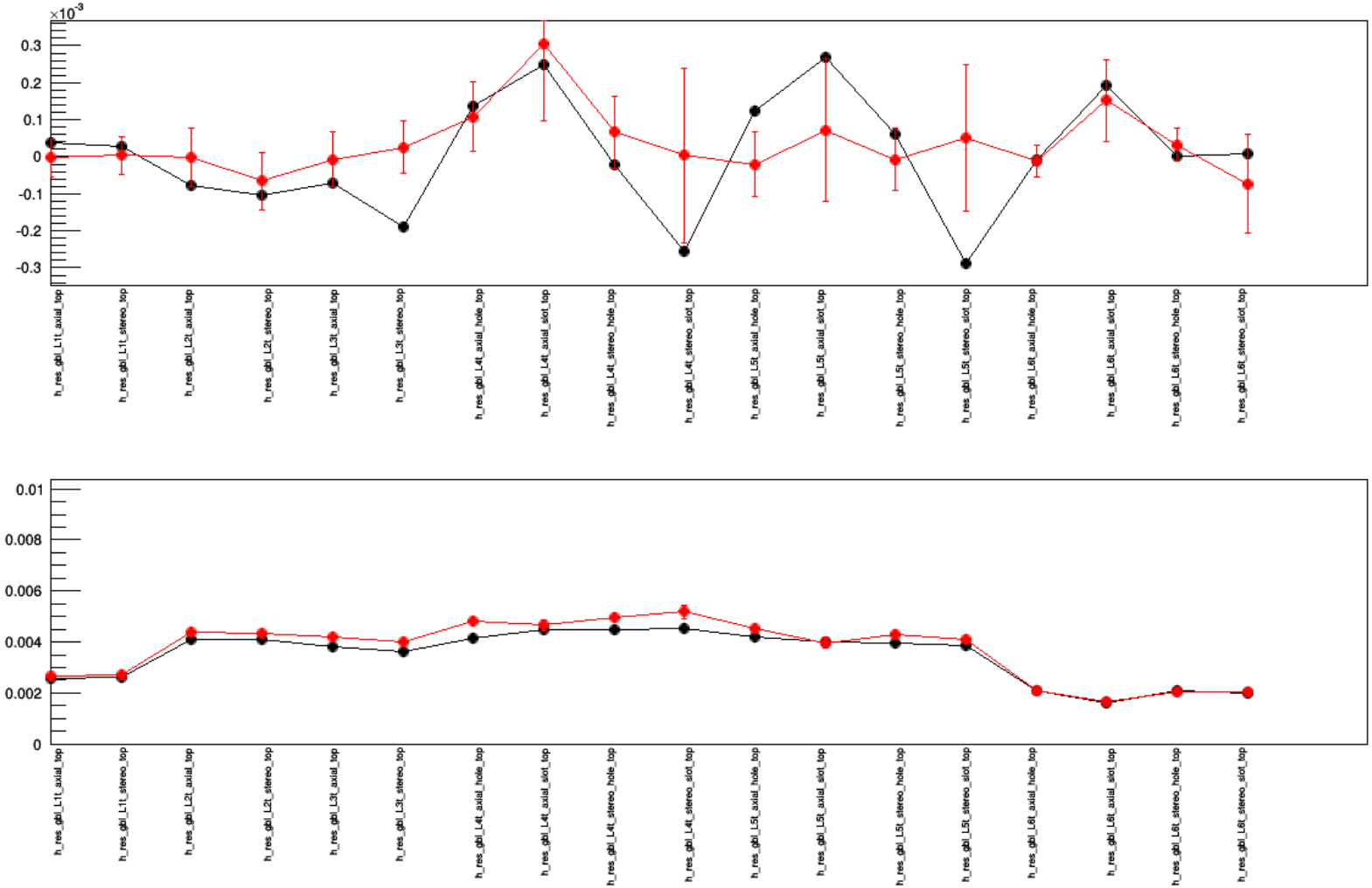
v3-4-fieldmap detector

Residuals bottom



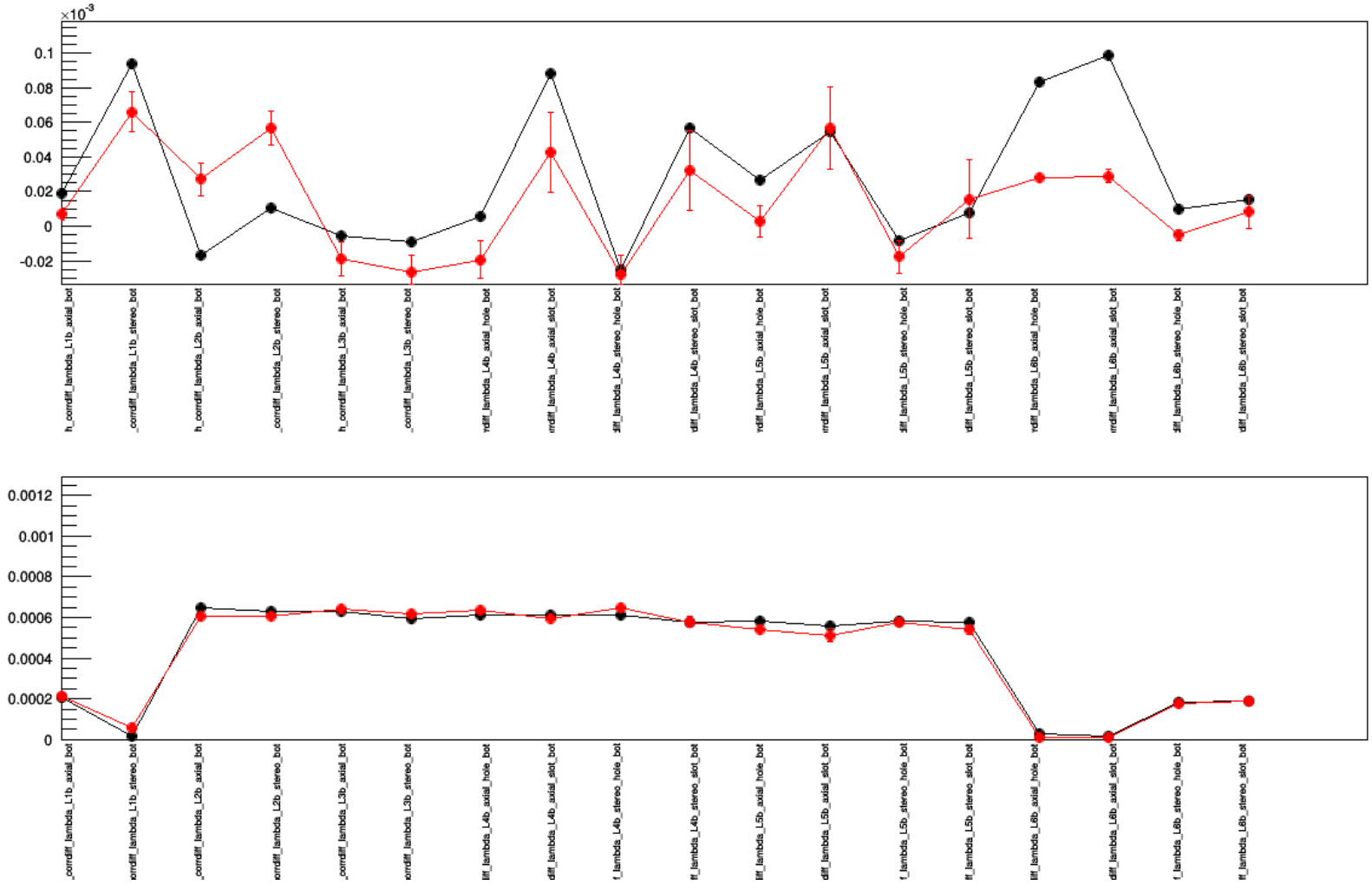
v3-4-fieldmap detector

Residuals top



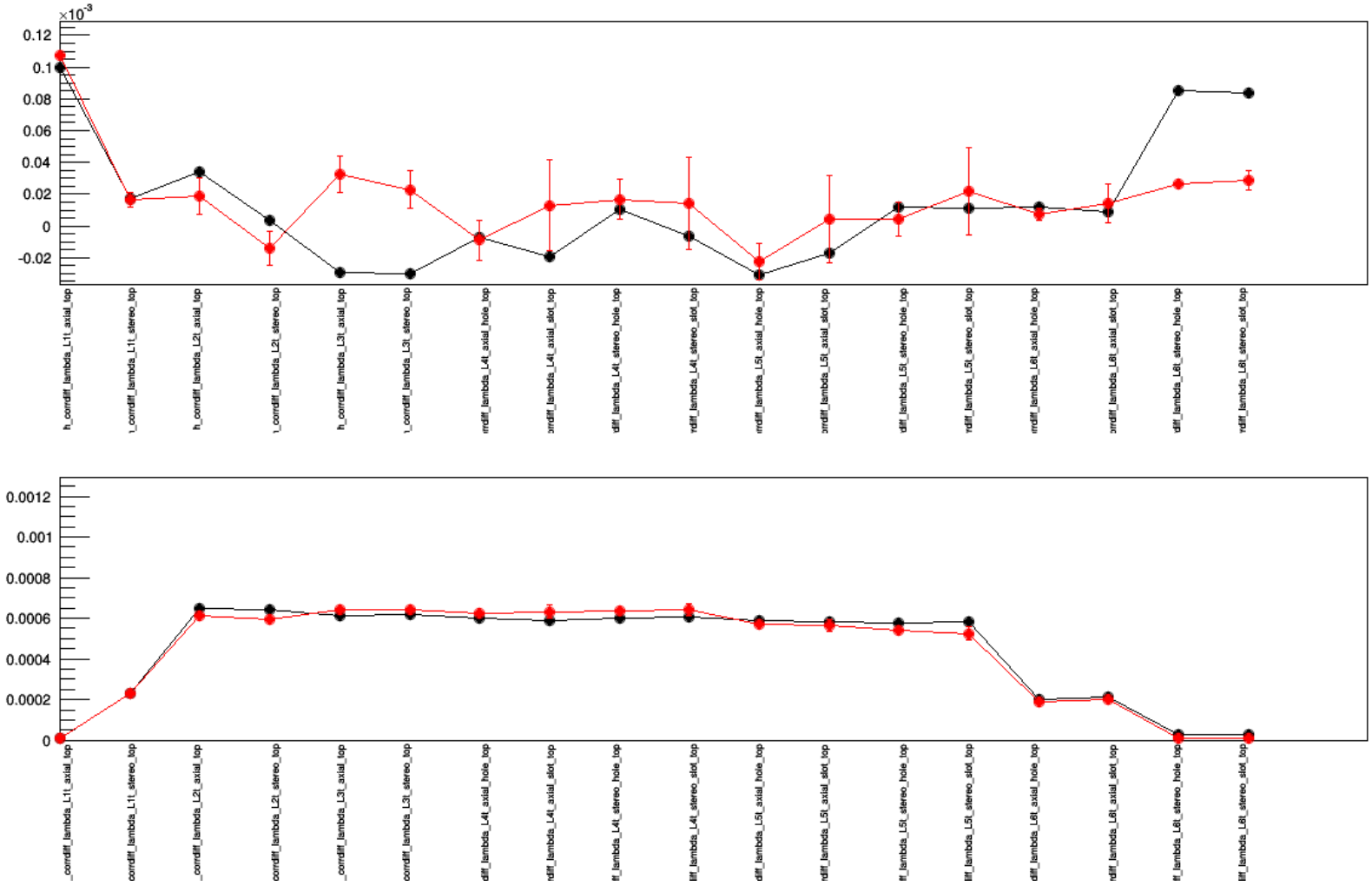
v3-4-fieldmap detector

Kinks lambda bottom



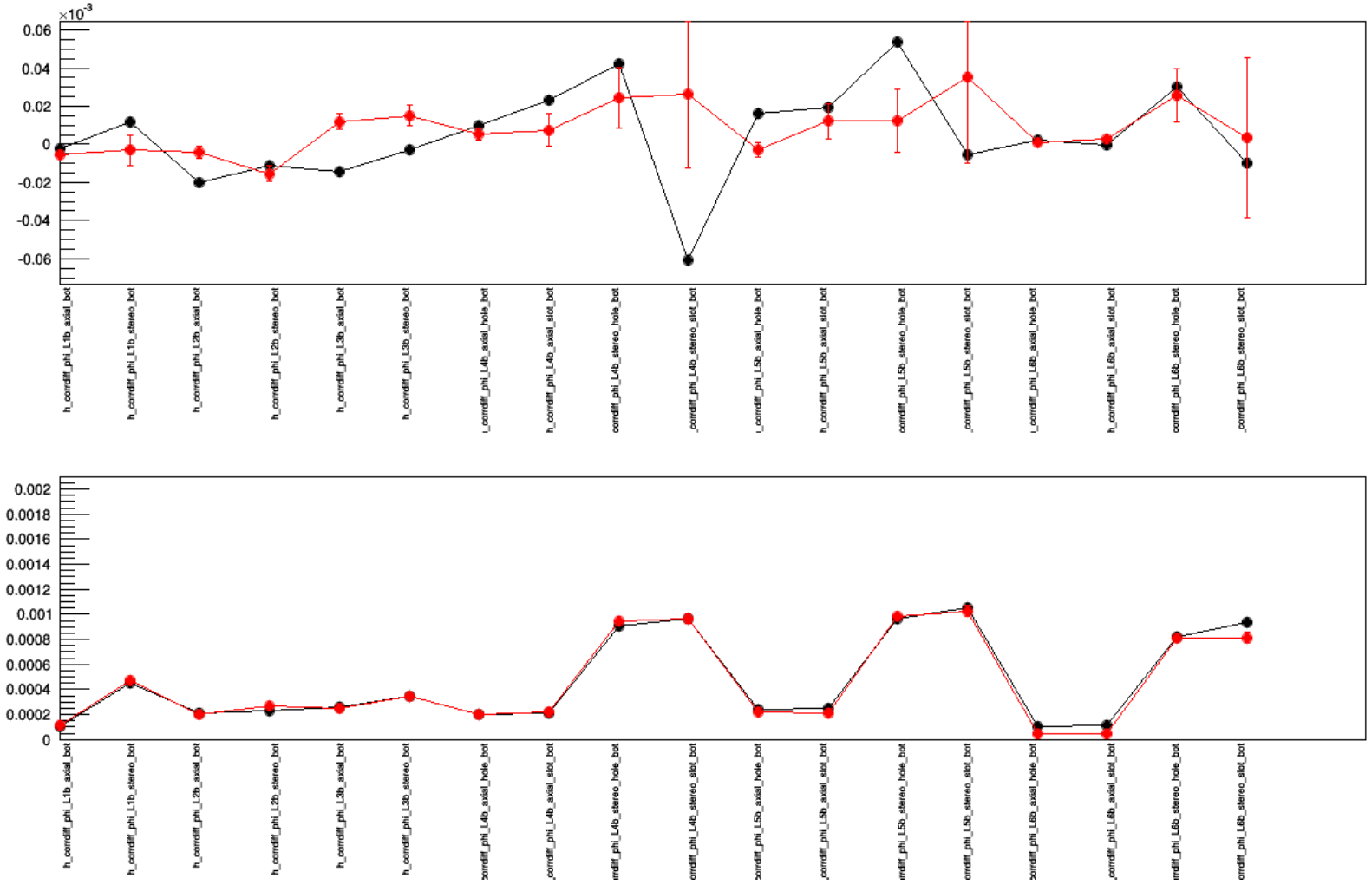
v3-4-fieldmap detector

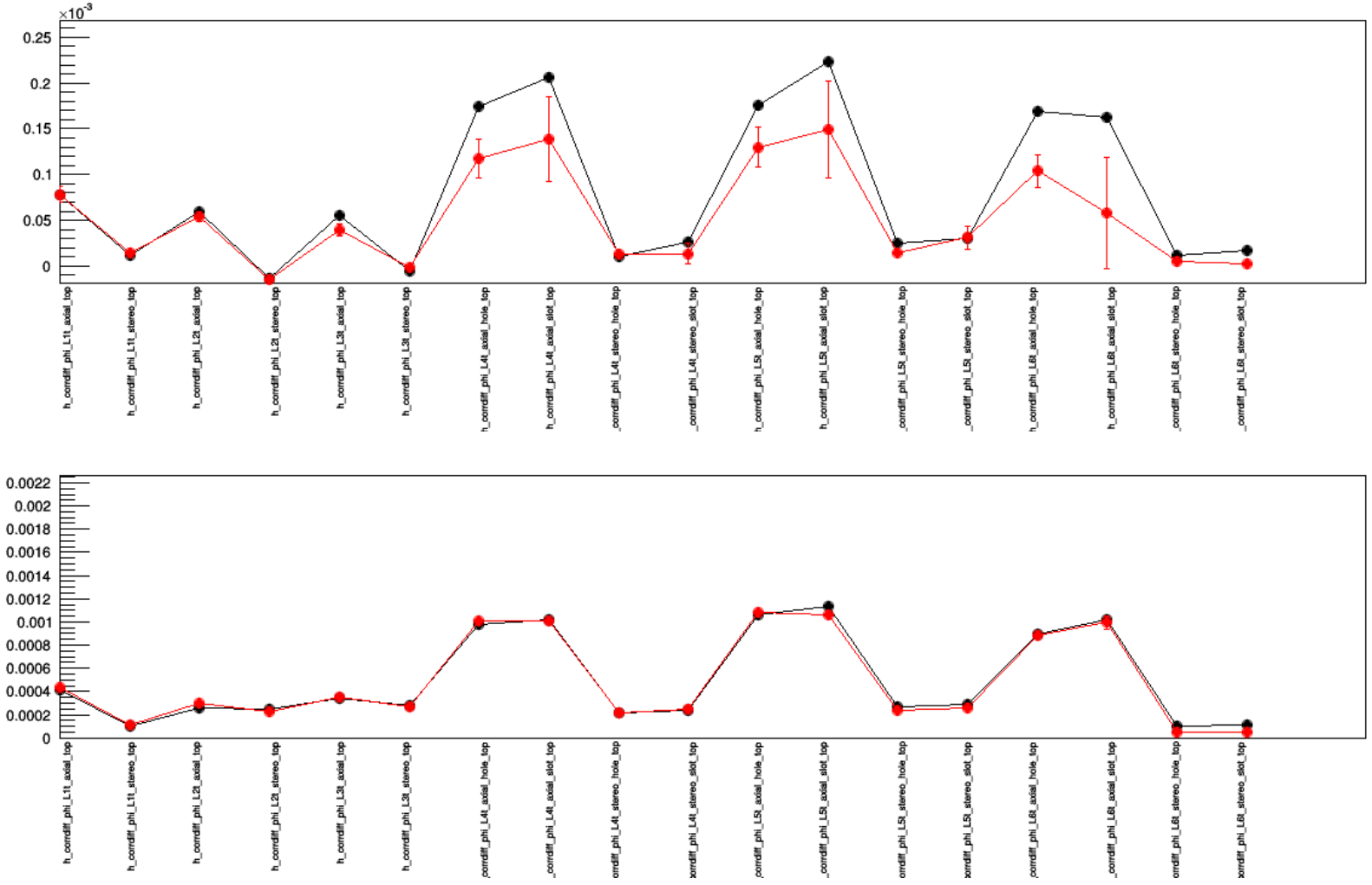
Kinks lambda top



v3-4-fieldmap detector

Kinks phi bottom



v3-4-fieldmap detector

Kinks phi top