

A comparison of the calculated continuum emissivity, compared to actual measured emissivities. Plots are shown calculating for TS channel 4, z-meter, and a band of Loweus integrated from 50 to 70 angstroms. These are calculated where the calculated emissivity uses $z_{eff} = z_{ave}$, and for $z_{eff} = 1$.

The white trace is calculated emissivity, blue is measured sensor data, and the red trace is the sensor data with noise filtered out.

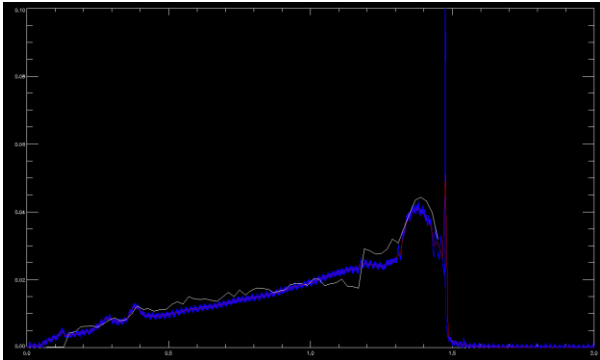
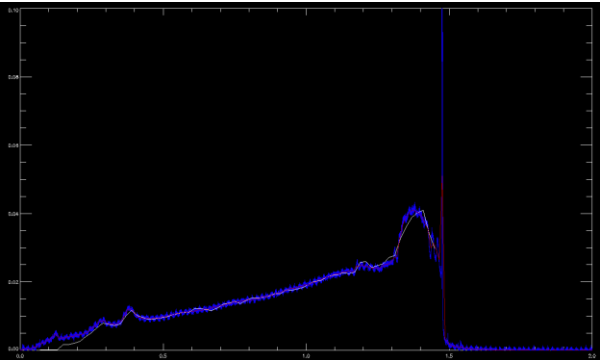
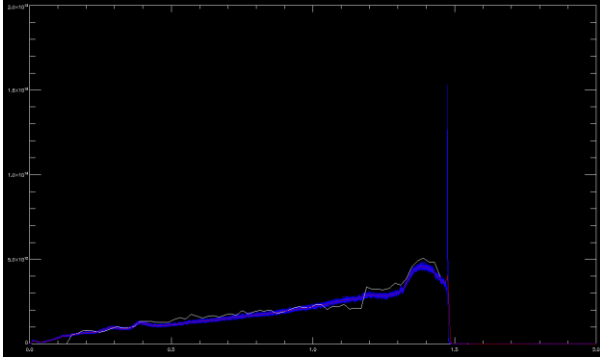
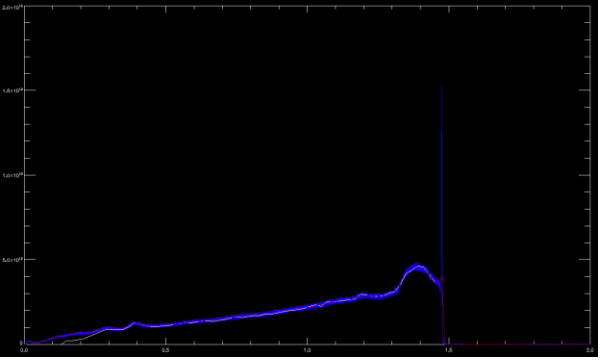
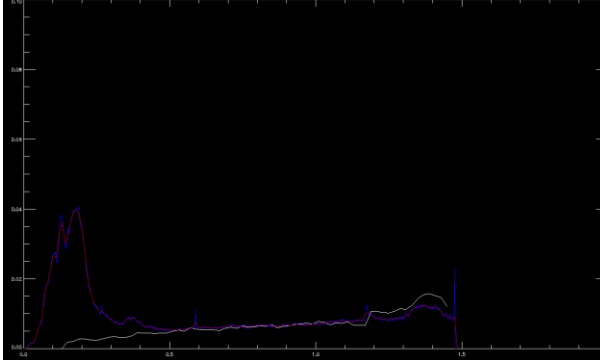
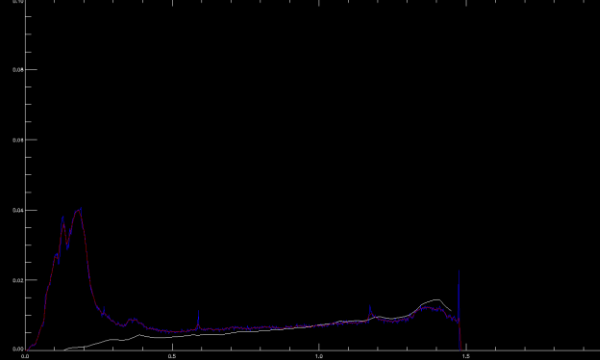
These could be re-run by running `zeff_brem_calibrate, shot, 'TS_4, zmeter, Loweus', (zeffset=1)`

After displaying the graph, the user will be prompted for beginning and ending time to perform the calibration.

Calibration is a constant to multiply the sensor data by to get the power within the detector's transmission function. This comes out to being in units of W/m^2 since it is integrated over wavelength to get the power of the detector's wavelength window. In principle, the calibration constant should be the same throughout all shots in an ideal world for one detector in $z_{eff}=z_{ave}$ mode.

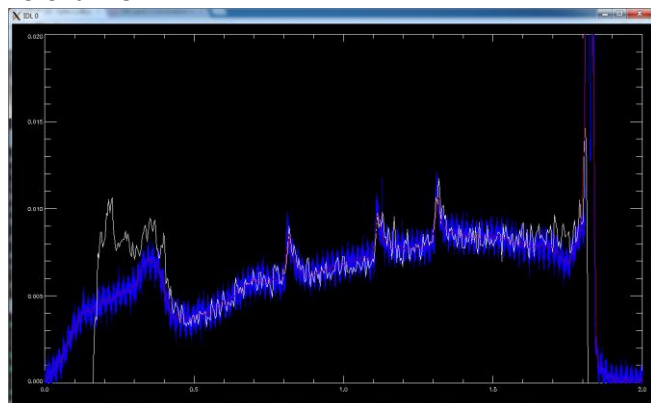
The plots have observed and calculated emissivities displayed such that they have equal magnitude at $t=1s$. This is not representative of actual calibration data and is merely for visualization.

1120522015 – high density zeff=1 shot

Zeff = Zave	Zeff = 1
<p data-bbox="131 300 293 327">TS Channel 4:</p>  <p data-bbox="131 695 610 793">beginning time: 0.5 ending time: 1.1 calibration (W/m²/count): 0.603179</p>	<p data-bbox="807 300 969 327">TS Channel 4:</p>  <p data-bbox="807 695 1286 793">beginning time: 0.5 ending time: 1.1 calibration (W/m²/count): 0.434484</p>
<p data-bbox="131 804 228 831">Zmeter:</p>  <p data-bbox="131 1199 626 1297">beginning time: 0.5 ending time: 1.1 calibration (W/m²/count): 1.06219e-11</p>	<p data-bbox="807 804 904 831">Zmeter:</p>  <p data-bbox="807 1199 1302 1297">beginning time: 0.5 ending time: 1.1 calibration (W/m²/count): 7.65569e-12</p>
<p data-bbox="131 1308 228 1335">Loweus:</p>  <p data-bbox="131 1703 602 1801">beginning time: 0.5 ending time: 1.1 calibration (W/m²/count): 3499.84</p>	<p data-bbox="807 1308 904 1335">Loweus:</p>  <p data-bbox="807 1703 1278 1801">beginning time: 0.5 ending time: 1.1 calibration (W/m²/count): 2553.67</p>

Ze_{eff} = Z_{ave}

TS Channel 4:

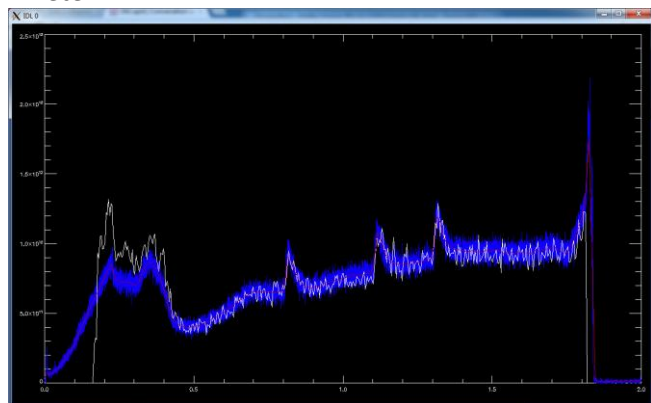


beginning time: 0.7

ending time: 1.7

calibration (W/m²/count): 0.791395

Zmeter:

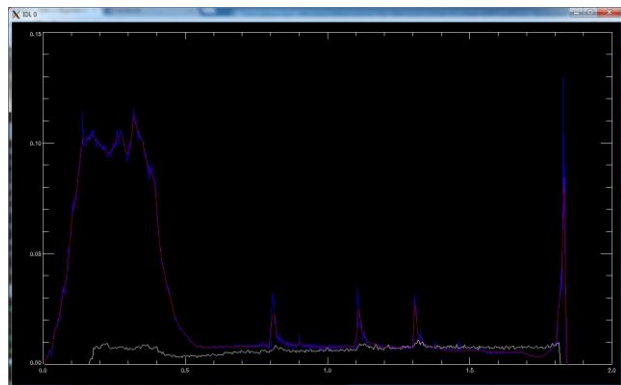


beginning time: 0.7

ending time: 1.7

calibration (W/m²/count): 1.48843e-11

Loweus:

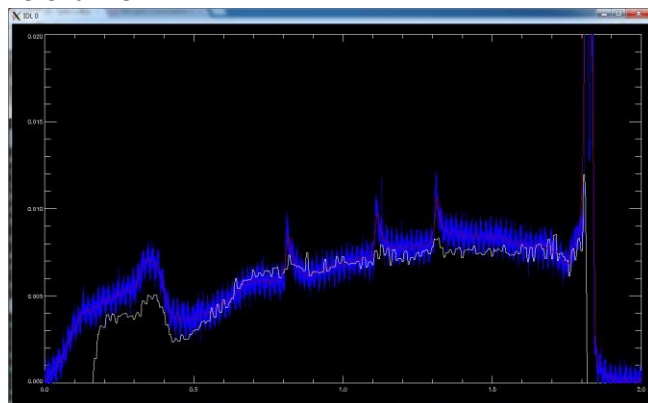


beginning time: 1.

ending time: 1.6

calibration (W/m²/count): 2299.41**Ze_{eff} = 1**

TS Channel 4:

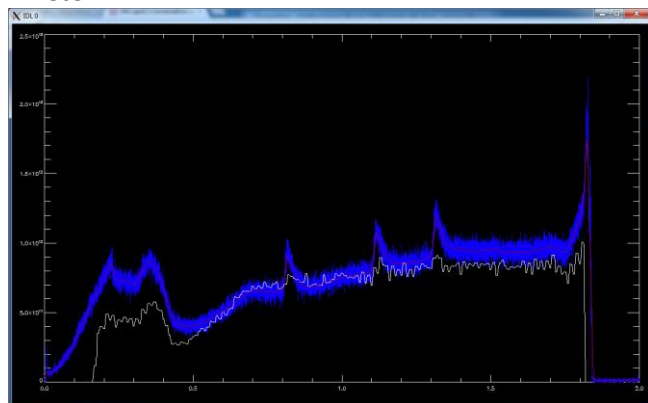


beginning time: 0.7

ending time: 1.7

calibration (W/m²/count): 0.331898

Zmeter:

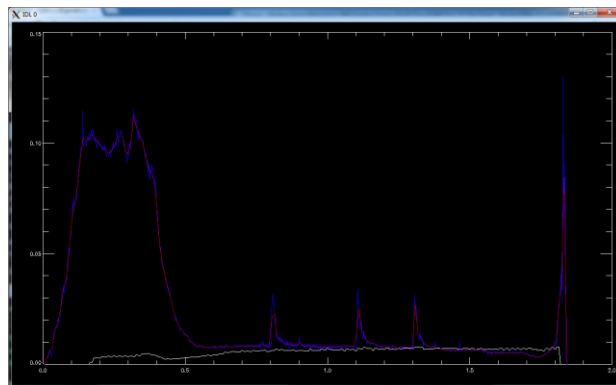


beginning time: 0.7

ending time: 1.7

calibration (W/m²/count): 6.24604e-12

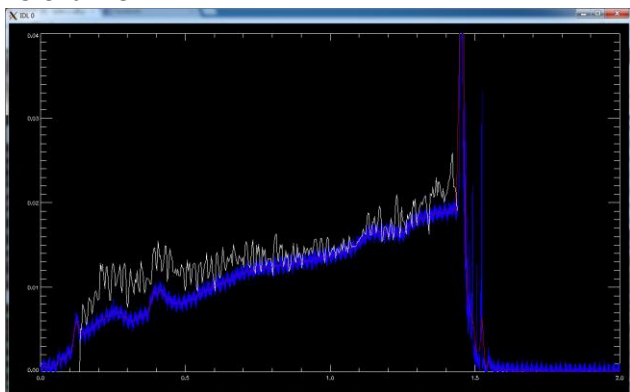
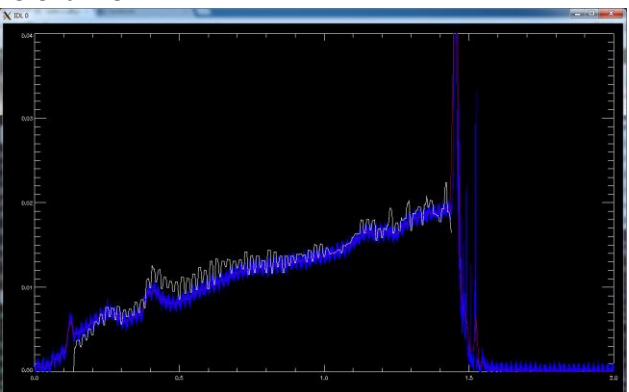
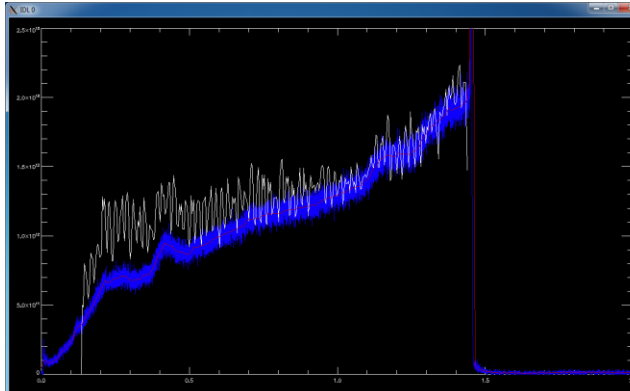
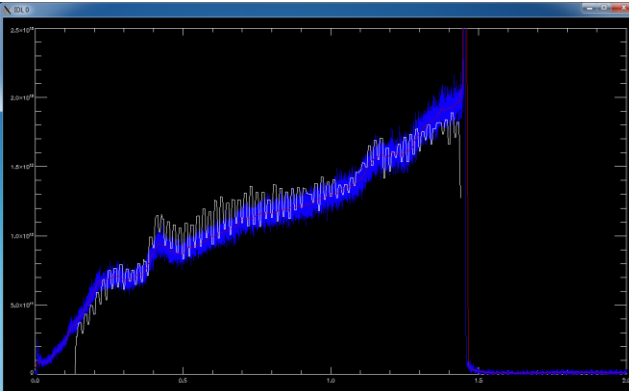
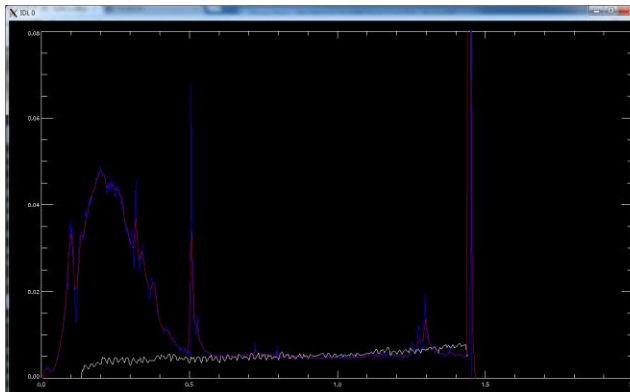
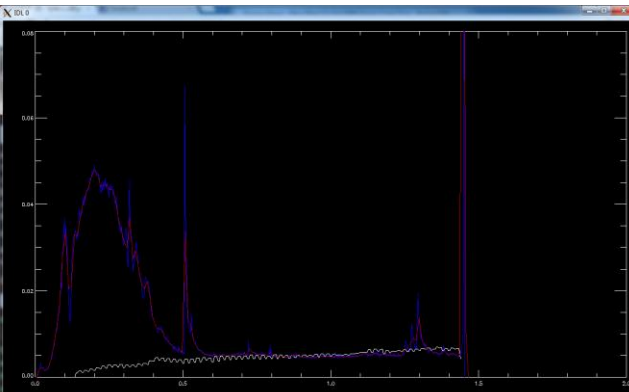
Loweus:



beginning time: 1.

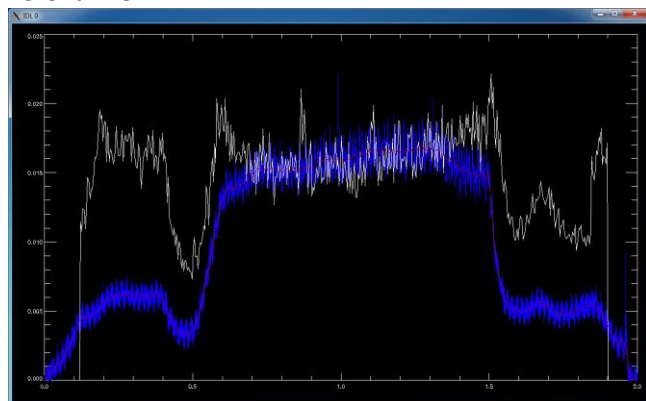
ending time: 1.6

calibration (W/m²/count): 944.915

<p>Zeff = Zave</p> <p>TS Channel 4:</p>  <p>beginning time: 0.8 ending time: 1.4 calibration (W/m²/count): 0.553943</p>	<p>Zeff = 1</p> <p>TS Channel 4:</p>  <p>beginning time: 0.8 ending time: 1.4 calibration (W/m²/count): 0.352740</p>
<p>Zmeter:</p>  <p>beginning time: 0.7 ending time: 1.3 calibration (W/m²/count): 1.16655e-11</p>	<p>Zmeter:</p>  <p>beginning time: 0.7 ending time: 1.3 calibration (W/m²/count): 7.45759e-12</p>
<p>Loweus:</p>  <p>beginning time: 0.7 ending time: 1.2 calibration (W/m²/count): 4017.63</p>	<p>Loweus:</p>  <p>beginning time: 0.7 ending time: 1.2 calibration (W/m²/count): 2569.33</p>

Ze_{eff} = Z_{ave}

TS Channel 4:

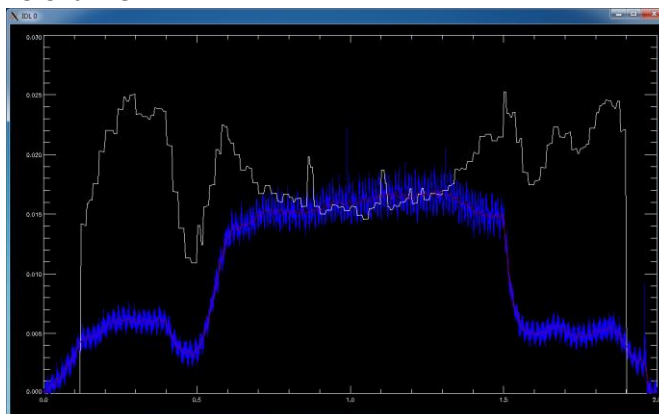


beginning time: 0.8

ending time: 1.35

calibration (W/m²/count): 0.378487**Ze_{eff} = 1**

TS Channel 4:

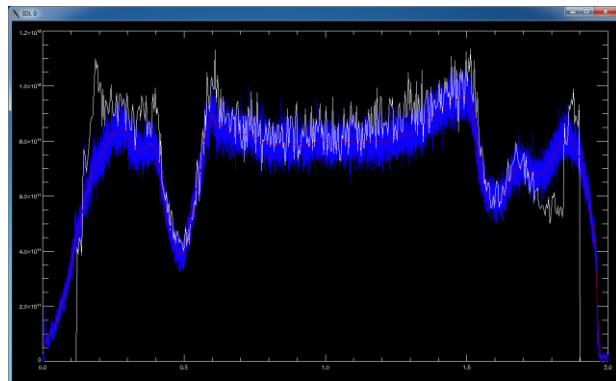


beginning time: 0.8

ending time: 1.35

calibration (W/m²/count): 0.0686379

Zmeter:

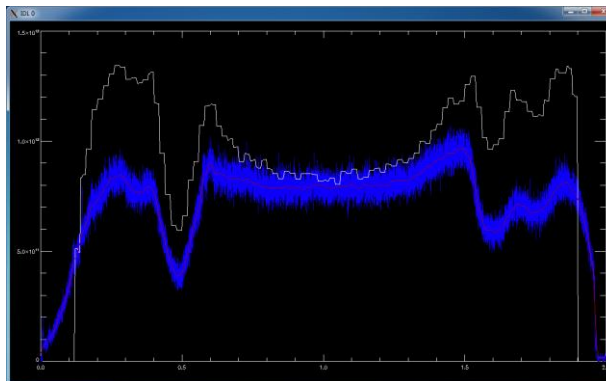


beginning time: 0.7

ending time: 1.4

calibration (W/m²/count): 1.64971e-11

Zmeter:

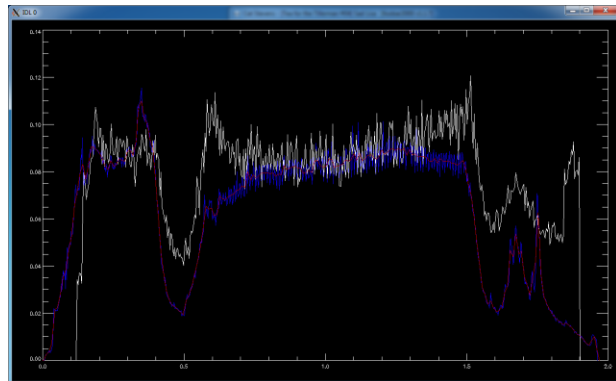


beginning time: 0.7

ending time: 1.4

calibration (W/m²/count): 3.01019e-12

Loweus:

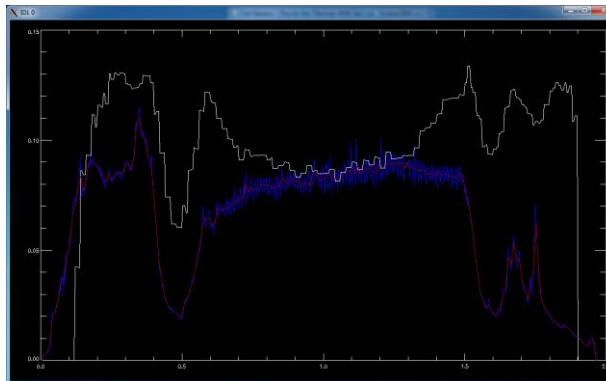


beginning time: 0.8

ending time: 1.4

calibration (W/m²/count): 210.825

Loweus:



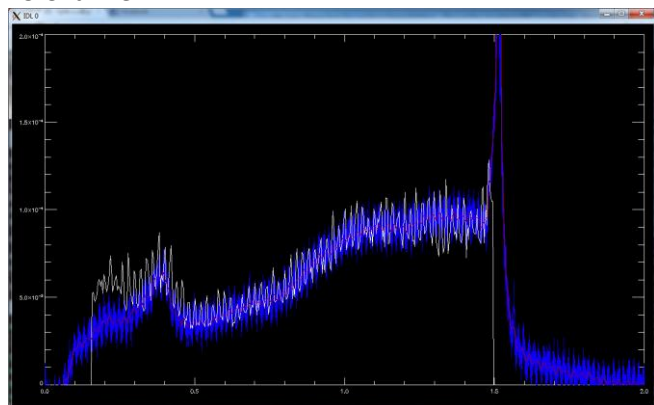
beginning time: 0.7

ending time: 1.4

calibration (W/m²/count): 39.1649

Zeff = Zave

TS Channel 4:

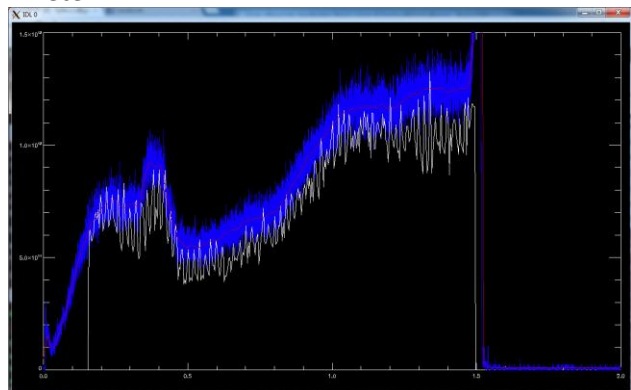


beginning time: 1.

ending time: 1.45

calibration (W/m²/count): 1.07988

Zmeter:

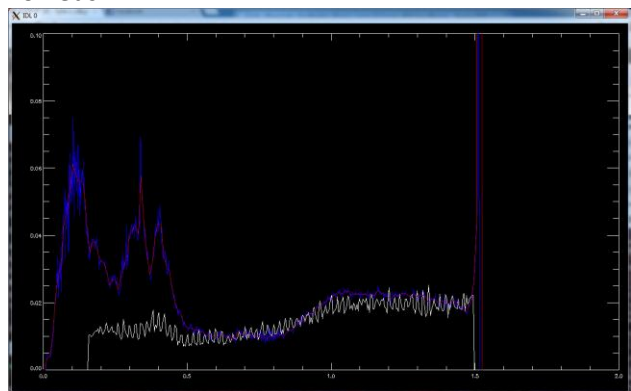


beginning time: 1.

ending time: 1.45

calibration (W/m²/count): 1.64062e-11

Loweus:

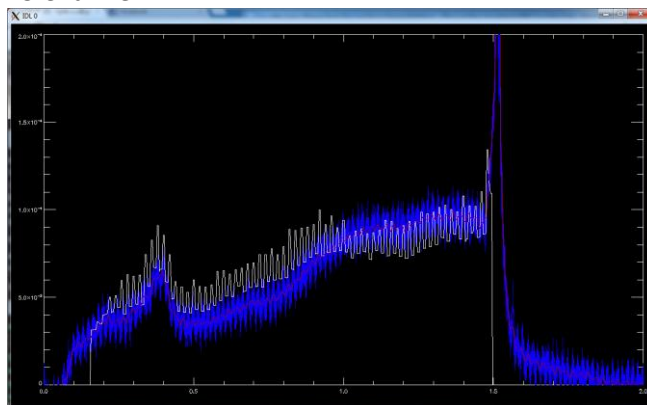


beginning time: 1.

ending time: 1.45

calibration (W/m²/count): 1235.69**Zeff = 1**

TS Channel 4:

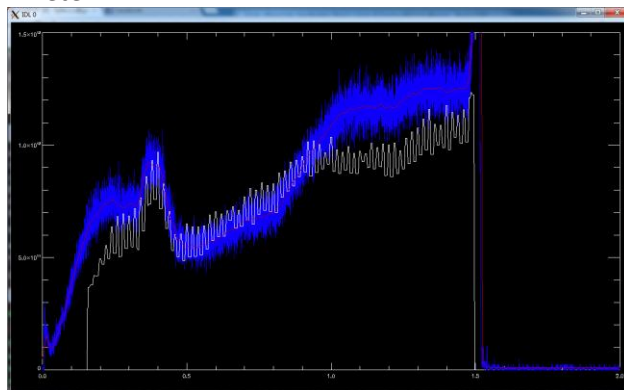


beginning time: 1.

ending time: 1.45

calibration (W/m²/count): 0.311513

Zmeter:

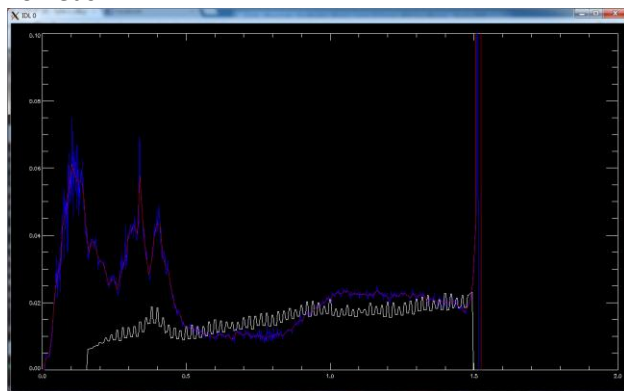


beginning time: 1.

ending time: 1.45

calibration (W/m²/count): 4.73130e-12

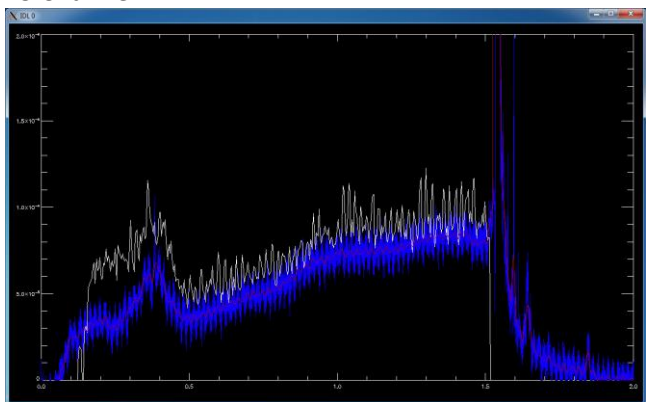
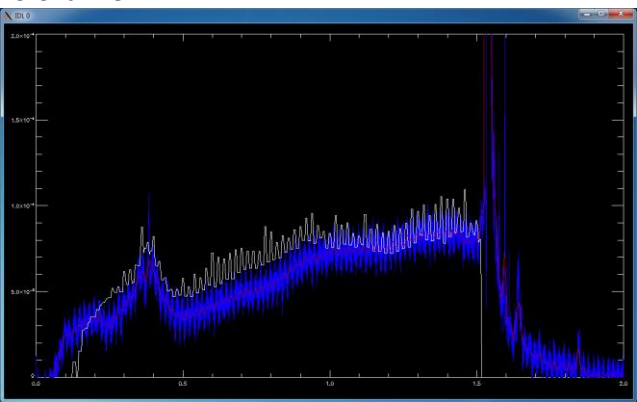
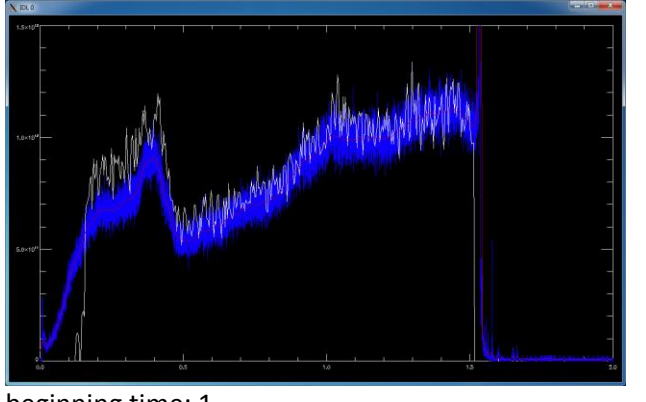
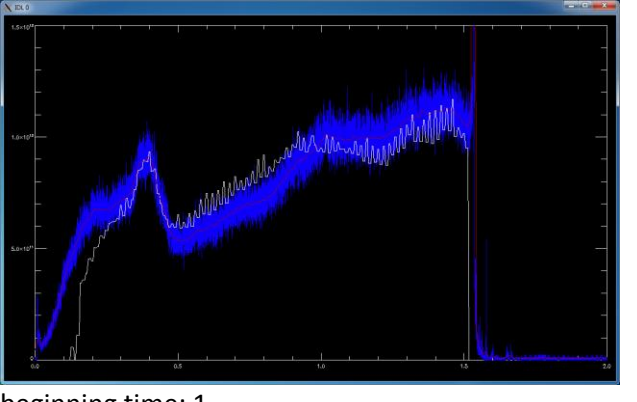
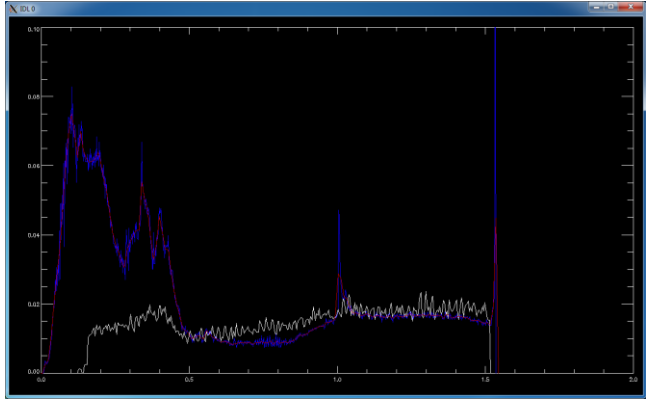
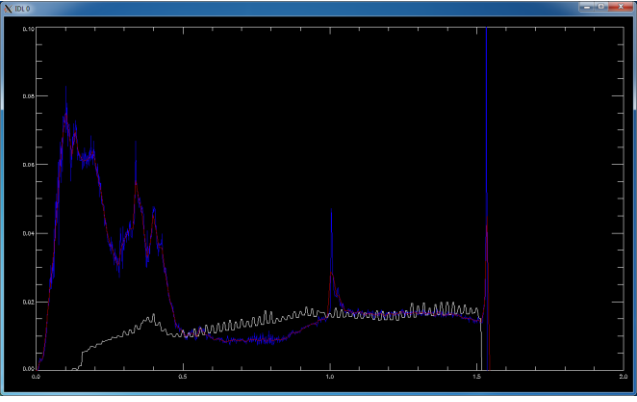
Loweus:



beginning time: 1.

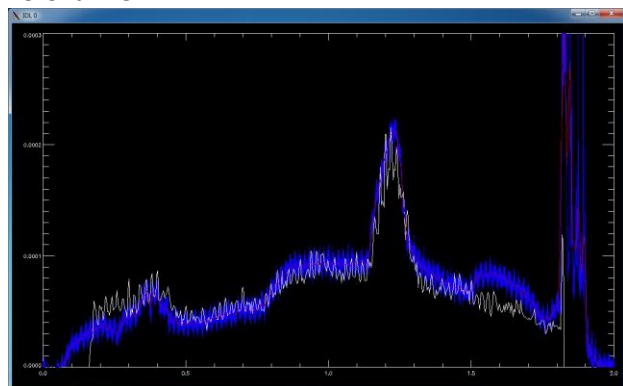
ending time: 1.45

calibration (W/m²/count): 357.645

<p>Zeff = Zave</p> <p>TS Channel 4:</p>  <p>beginning time: 1. ending time: 1.45 calibration (W/m²/count): 1.09735</p>	<p>Zeff = 1</p> <p>TS Channel 4:</p>  <p>beginning time: 1. ending time: 1.45 calibration (W/m²/count): 0.389372</p>
<p>Zmeter:</p>  <p>beginning time: 1. ending time: 1.45 calibration (W/m²/count): 1.61496e-11</p>	<p>Zmeter:</p>  <p>beginning time: 1. ending time: 1.45 calibration (W/m²/count): 5.73188e-12</p>
<p>Loweus:</p>  <p>beginning time: 1.05 ending time: 1.45 calibration (W/m²/count): 1391.89</p>	<p>Loweus:</p>  <p>beginning time: 1.05 ending time: 1.45 calibration (W/m²/count): 495.297</p>

Zeff = Zave

TS Channel 4:

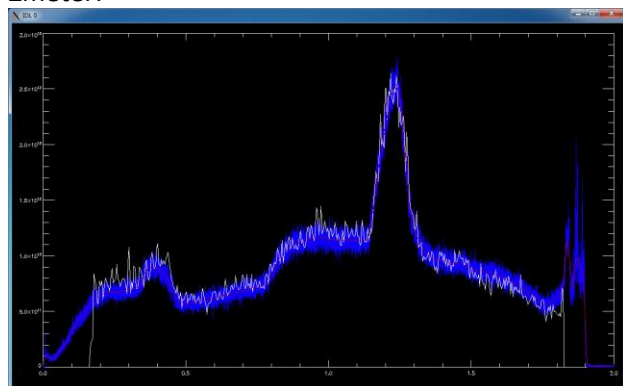


beginning time: 1.

ending time: 1.5

calibration (W/m²/count): 1.10616

Zmeter:

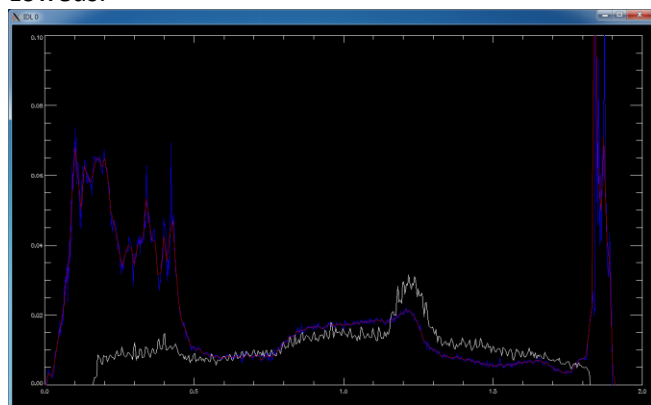


beginning time: 1.

ending time: 1.5

calibration (W/m²/count): 1.79045e-11

Loweus:

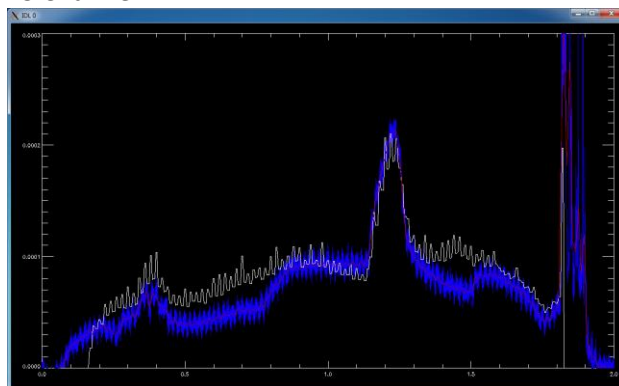


beginning time: 1.

ending time: 1.5

calibration (W/m²/count): 2608.04**Zeff = 1**

TS Channel 4:

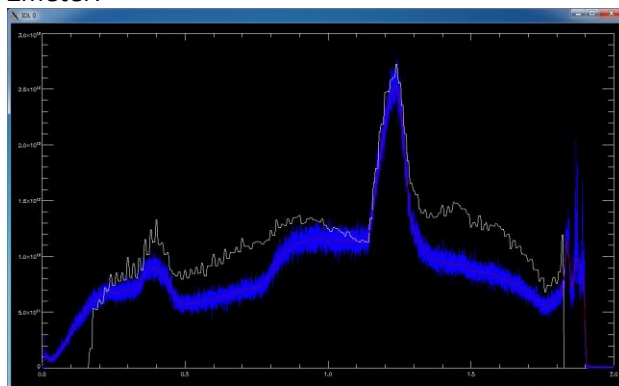


beginning time: 1.

ending time: 1.5

calibration (W/m²/count): 0.395677

Zmeter:

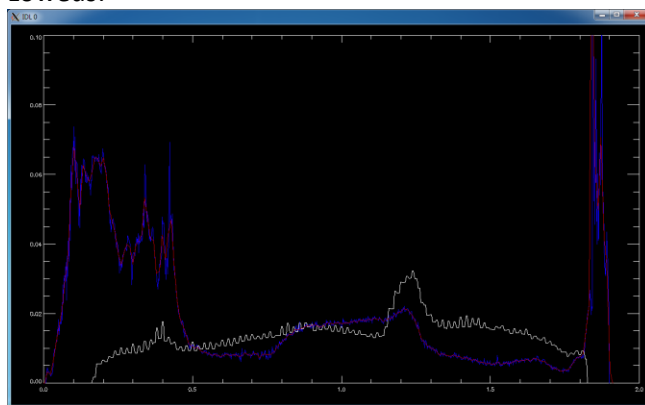


beginning time: 1.

ending time: 1.5

calibration (W/m²/count): 6.37669e-12

Loweus:



beginning time: 1.

ending time: 1.5

calibration (W/m²/count): 964.883

