CloudCal

Lee Drake
August 2, 2017
Paleoresearch Institute

CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

X-Ray Fluorescence Calibration

Calibration Name

myCalibration

Process Data | Plot Spectrum | Plot

Choose Spectra

Browse... No file selected

- (•) Spectra
- ( ) Net

Element:

(Fe) Iron

Load Cal File

Browse... No file selected

☐ Use Cal File

CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

X-Ray Fluorescence Calibration

Calibration Name

Obsidian

Give your calibration a name

Process Data | Plot Spectrum | Plot

Choose Spectra

Browse... No file selected

When you are done there, you can load spectra

- (•) Spectra
- ( ) Net

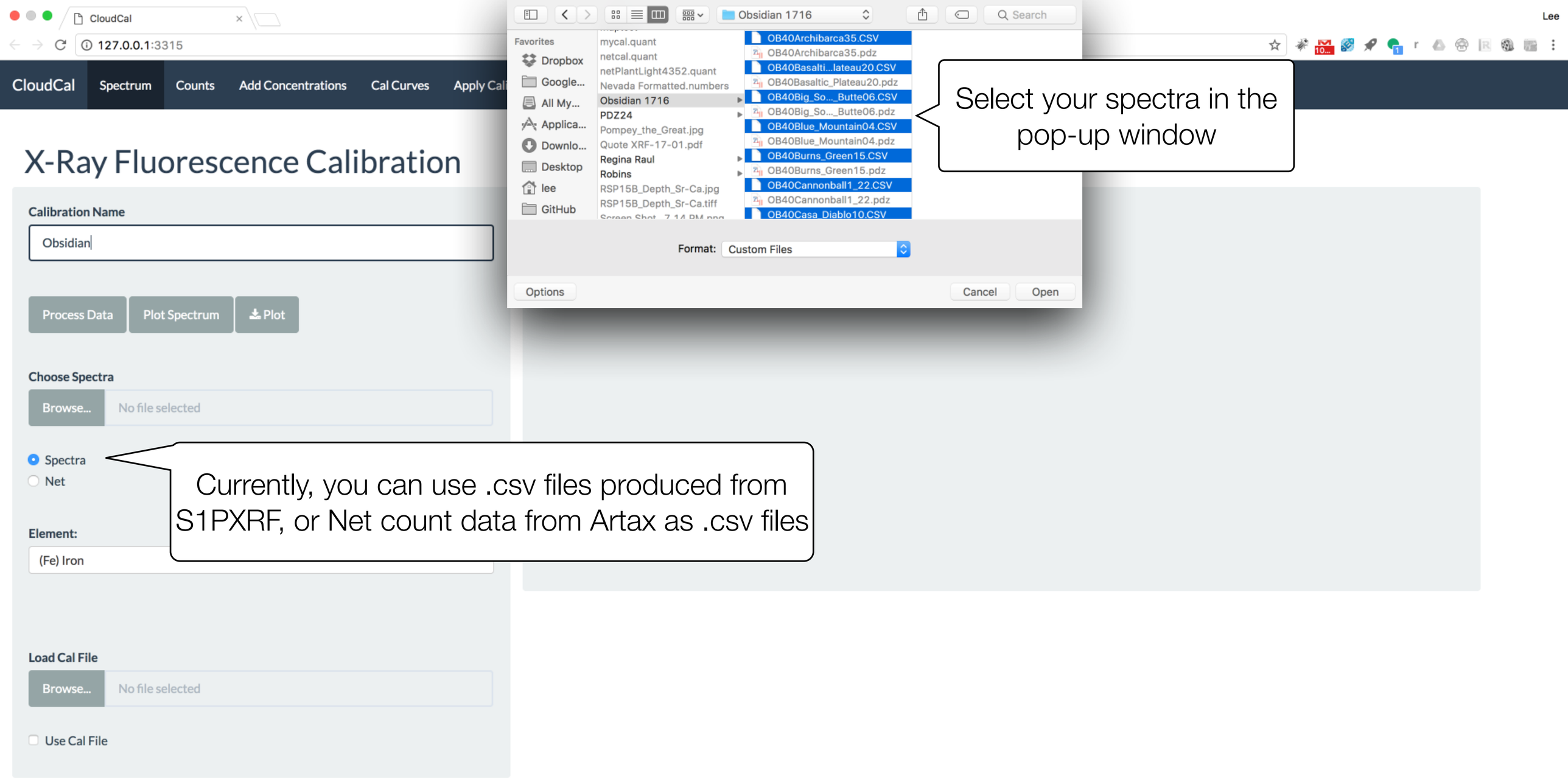
Element:

(Fe) Iron

Load Cal File

Browse... No file selected

☐ Use Cal File


CloudCal
127.0.0.1:3315
CloudCal
Spectrum
Counts
Add Concentrations
Cal Curves
Apply Cali
X-Ray Fluorescence Calibration
Calibration Name
Obsidian
Process Data
Plot Spectrum
Plot
Choose Spectra
Browse...
No file selected
Spectra
Net
Element:
(Fe) Iron
Load Cal File
Browse...
No file selected
Use Cal File
Obsidian 1716
Search
Favorites
Dropbox
Google...
All My...
Applica...
Downlo...
Desktop
lee
GitHub
mycal.quant
netcal.quant
netPlantLight4352.quant
Nevada Formatted.numbers
Obsidian 1716
PDZ24
Pompey_the_Great.jpg
Quote XRF-17-01.pdf
Regina Raul
Robins
RSP15B_Depth_Sr-Ca.jpg
RSP15B_Depth_Sr-Ca.tiff
OB40Archibarca35.CSV
OB40Archibarca35.pdz
OB40Basalti...lateau20.CSV
OB40Basaltic_Plateau20.pdz
OB40Big_So..._Butte06.CSV
OB40Big_So..._Butte06.pdz
OB40Blue_Mountain04.CSV
OB40Blue_Mountain04.pdz
OB40Burns_Green15.CSV
OB40Burns_Green15.pdz
OB40Cannonball1_22.CSV
OB40Cannonball1_22.pdz
OB40Casa_Diablo10.CSV
Format:
Custom Files
Options
Cancel
Open
Select your spectra in the pop-up window
Currently, you can use .csv files produced from S1PXRF, or Net count data from Artax as .csv files

CloudCal

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CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

X-Ray Fluorescence Calibration

Calibration Name

Obsidian

Process Data | Plot Spectrum | Plot

Choose Spectra

Browse... 40 files

Upload complete

- (•) Spectra
- ( ) Net

Element:

(Fe) Iron

Load Cal File

Browse... No file selected

☐ Use Cal File

When spectra are done uploading, you will be notified here

CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

X-Ray Fluorescence Calibration

Calibration Name

Obsidian

Process Data

Next, click ‘Process Data’

Choose Spectra

Browse... 40 files

Upload complete

- (•) Spectra
- ( ) Net

Element:

(Fe) Iron

Load Cal File

Browse... No file selected

☐ Use Cal File

CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

When you are done, you can go to 'Counts' to select element lines

X-Ray Fluo

Calibration Name

Obsidian

Process Data | Plot Spectrum | Plot

Click 'Plot Spectrum' to see data (Only for spectra files)

Choose Spectra

Browse... 40 files

- (•) Spectra
- ( ) Net

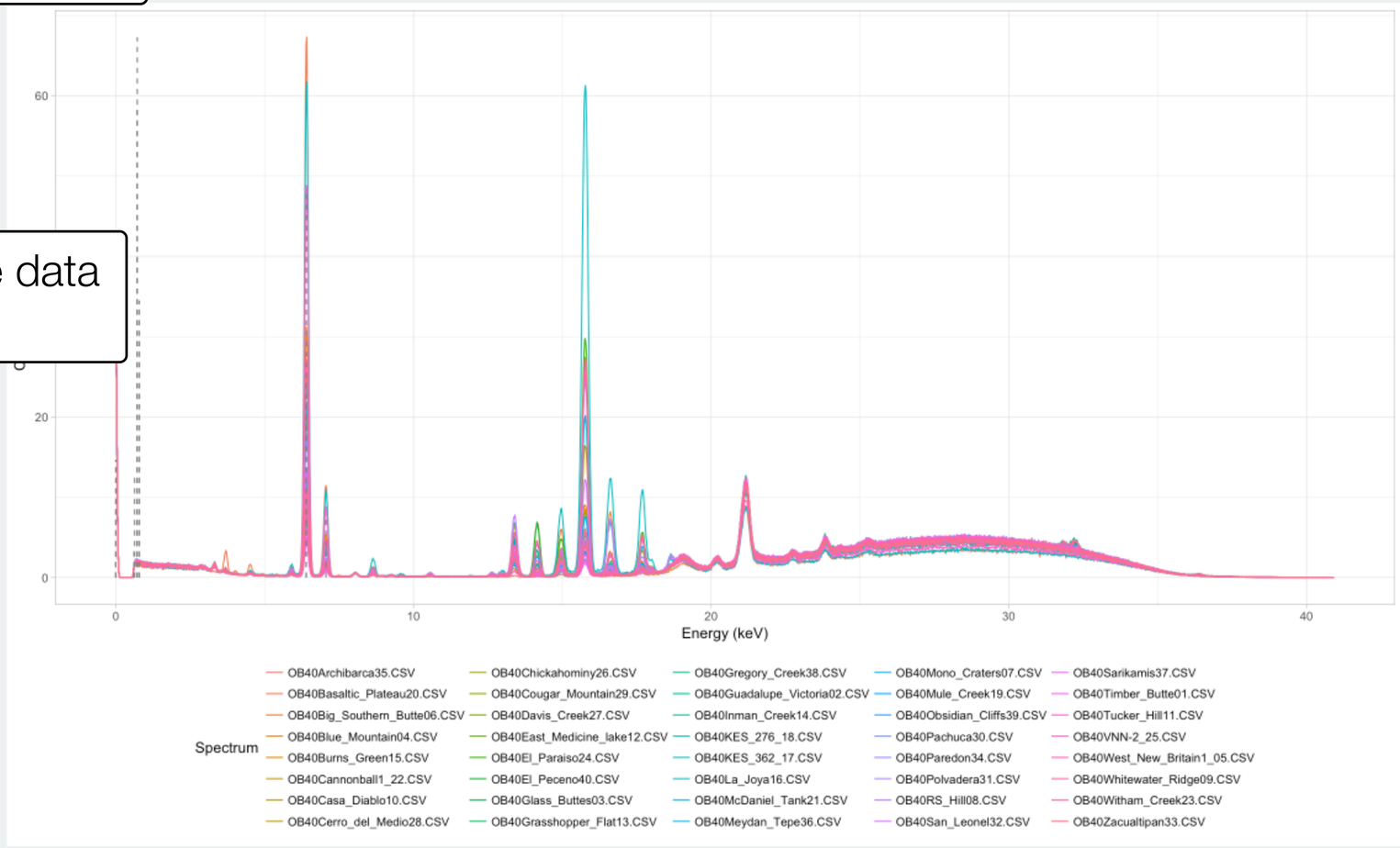
Element:

(Fe) Iron

Load Cal File

Browse... No file selected

☐ Use Cal File



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CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Confirm Elements | Table

Elemental lines to show:

- [ ] Ne.K.alpha
- [ ] Ne.K.beta
- [ ] Na.K.alpha
- [ ] Na.K.beta
- [ ] Mg.K.alpha
- [ ] Mg.K.beta
- [ ] Al.K.alpha
- [ ] Al.K.beta
- [ ] Si.K.alpha
- [ ] Si.K.beta
- [ ] P.K.alpha
- [ ] P.K.beta
- [ ] S.K.alpha
- [ ] S.K.beta
- [ ] Cl.K.alpha
- [ ] Cl.K.beta
- [ ] Ar.K.alpha
- [ ] Ar.K.beta
- [ ] K.K.alpha
- [ ] K.K.beta
- [x] Ca.K.alpha
- [ ] Ca.K.beta
- [ ] Sc.K.alpha
- [ ] Sc.K.beta
- [x] Ti.K.alpha
- [ ] Ti.K.beta
- [ ] V.K.alpha
- [ ] V.K.beta
- [ ] Cr.K.alpha
- [ ] Cr.K.beta
- [ ] Mn.K.alpha

Choose your spectra in the panel to the left

Spectral Lines

Show 10 entries

Search:

	Ca.K.alpha	Ti.K.alpha	Fe.K.alpha	Cu.K.alpha	Zn.K.alpha	Pb.L.alpha
1	3	1	27	2	1	2
2	6	3	194	2	2	1
3	2	1	38	2	4	3
4	1	1	90	2	3	1
5	1	1	57	2	2	2
6	1	1	75	2	3	2
7	2	1	29	2	1	2
8	1	1	23	2	1	2
9	2	1	37	2	1	2
10	2	1	26	2	2	1

Showing 1 to 10 of 40 entries

Previous 1 2 3 4 Next

Counts per second for element lines will appear here

CloudCal

127.0.0.1:3315

- [ ] Cr.K.alpha
- [ ] Cr.K.beta
- [x] Mn.K.alpha
- [ ] Mn.K.beta
- [x] Fe.K.alpha
- [ ] Fe.K.beta
- [ ] Co.K.alpha
- [ ] Co.K.beta
- [ ] Ni.K.alpha
- [ ] Ni.K.beta
- [x] Cu.K.alpha
- [ ] Cu.K.beta
- [x] Zn.K.alpha
- [ ] Zn.K.beta
- [ ] Ga.K.alpha
- [ ] Ga.K.beta
- [ ] Ge.K.alpha
- [ ] Ge.K.beta
- [ ] As.K.alpha
- [ ] As.K.beta
- [ ] Se.K.alpha
- [ ] Se.K.beta
- [ ] Br.K.alpha
- [ ] Br.K.beta
- [ ] Kr.K.alpha
- [ ] Kr.K.beta
- [x] Rb.K.alpha
- [ ] Rb.K.beta
- [x] Sr.K.alpha
- [ ] Sr.K.beta
- [x] Y.K.beta
- [ ] Y.K.alpha
- [x] Zr.K.alpha
- [ ] Zr.K.beta
- [x] Nb.K.alpha
- [ ] Nb.K.beta
- [ ] Mo.K.alpha
- [ ] Mo.K.beta
- [ ] Mo.L.alpha

You will need to scroll down - all possible lines are listed here

Here, you don't need to have concentrations for all elements - you can check some if you only want to use them for corrections (e.g. correct As K-alpha by Pb L-beta)

CloudCal

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CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Confirm Elements | Table

When you are done, click 'Confirm Elements'

Ele

- [ ]
- [ ]
- [ ]
- [ ] Na.K.beta
- [ ] Mg.K.alpha
- [ ] Mg.K.beta
- [ ] Al.K.alpha
- [ ] Al.K.beta
- [ ] Si.K.alpha
- [ ] Si.K.beta
- [ ] P.K.alpha
- [ ] P.K.beta
- [ ] S.K.alpha
- [ ] S.K.beta
- [ ] Cl.K.alpha
- [ ] Cl.K.beta
- [ ] Ar.K.alpha
- [ ] Ar.K.beta
- [x] K.K.alpha
- [ ] K.K.beta
- [x] Ca.K.alpha
- [ ] Ca.K.beta
- [ ] Sc.K.alpha
- [ ] Sc.K.beta
- [x] Ti.K.alpha
- [ ] Ti.K.beta
- [ ] V.K.alpha
- [ ] V.K.beta
- [ ] Cr.K.alpha
- [ ] Cr.K.beta
- [x] Mn.K.alpha

Spectral Lines

Show 10 entries

Search:

	K.K.alpha	Ca.K.alpha	Ti.K.alpha	Mn.K.alpha	Fe.K.alpha	Cu.K.alpha	Zn.K.alpha	Ga.K.alpha	As.K.alpha	Rb.K.alpha	Sr.K.alpha	Y.K.b
1	3	3	1	2	27	2	1	1	1	11	38	
2	2	6	3	3	194	2	2	1	0	1	25	
3	4	2	1	1	38	2	4	1	2	26	1	
4	3	1	1	4	90	2	3	1	1	5	1	
5	3	1	1	2	57	2	2	1	1	10	1	
6	3	1	1	1	75	2	3	1	2	31	1	
7	4	2	1	1	29	2	1	1	1	14	13	
8	3	1	1	1	23	2	1	1	1	15	1	
9	3	2	1	1	37	2	1	1	2	10	3	
10	3	2	1	1	26	2	2	1	1	9	4	

Showing 1 to 10 of 40 entries

Previous 1 2 3 4 Next

CloudCal

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Lee

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Navigate to 'Add Concentrations'

Enter Values

Enter Concentrations

	Spectrum	K.K.alpha	Ca.K.alpha	Ti.K.alpha	Mn.K.alpha	Fe.K.alpha	Co.K.alpha	Cu.K.alpha	Zn.K.alpha	Ga.K.alpha	As.K.alpha	Rb.K.alpha	Sr.K.alpha	Y.K.a
1	OB40Archibarca35.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	OB40Basaltic_Plateau20.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3	OB40Big_Southern_Butte06.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4	OB40Blue_Mountain04.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5	OB40Burns_Green15.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6	OB40Cannonball1_22.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7	OB40Casa_Diablo10.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8	OB40Cerro_del_Medio28.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
9	OB40Chickahominy26.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
10	OB40Cougar_Mountain29.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
11	OB40Davis_Creek27.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
12	OB40East_Medicine_lake12.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
13	OB40El_Paraiso24.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
14	OB40El_Peceno40.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
15	OB40Glass_Buttes03.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
16	OB40Grasshopper_Flat13.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
17	OB40Gregory_Creek38.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
18	OB40Guadalupe_Victoria02.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
19	OB40Inman_Creek14.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
20	OB40KES_276_18.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
21	OB40KES_362_17.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
22	OB40La_Joya16.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
23	OB40McDaniel_Tank21.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
24	OB40Meydan_Tepe36.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
25	OB40Mono_Craters07.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
26	OB40Mule_Creek19.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
27	OB40Obsidian_Cliffs39.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
28	OB40Pachuca30.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
29	OB40Paredon34.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
30	OB40Polvadera31.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
31	OB40RS_Hill08.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
32	OB40San_Leonel32.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
33	OB40Sarikamis37.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
34	OB40Timber_Butte01.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
35	OB40Tucker_Hill11.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
36	OB40VNN-2_25.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
37	OB40West_New_Britain1_05.CSV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Concentration data will begin empty, you will need to provide these values

CloudCal

127.0.0.1:3315

Lee

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Enter Values

Enter Concentrations

	Spectrum	K.K.alpha	Ca.K.alpha	Ti.K.alpha	Mn.K.alpha	Fe.K.alpha	Co.K.alpha	Cu.K.alpha	Zn.K.alpha	Ga.K.alpha	As.K.alpha	Rb.K.alpha	Sr.K.alpha	Y.K.a
1	OB40Archibarca35.CSV	3.17	1.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	OB40Basaltic_Plateau20.CSV	0.20	4.99	0.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3	OB40Big_Southern_Butte06.CSV	4.06	0.32	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4	OB40Blue_Mountain04.CSV	2.77	0.10	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5	OB40Burns_Green15.CSV	3.50	0.13	0.10						0.00	0.00	0.00	0.00	
6	OB40Cannonball1_22.CSV	3.68	0.18	0.10						0.00	0.00	0.00	0.00	
7	OB40Casa_Diablo10.CSV	3.98	0.61	0.11						0.00	0.00	0.00	0.00	
8	OB40Cerro_del_Medio28.CSV	3.64	0.25	0.05						0.00	0.00	0.00	0.00	
9	OB40Chickahominy26.CSV	3.52	0.42	0.11						0.00	0.00	0.00	0.00	
10	OB40Cougar_Mountain29.CSV	3.22	0.47	0.03						0.00	0.00	0.00	0.00	
11	OB40Davis_Creek27.CSV	4.01	0.58	0.05						0.00	0.00	0.00	0.00	
12	OB40East_Medicine_lake12.CSV	3.66	0.63	0.14						0.00	0.00	0.00	0.00	
13	OB40El_Paraiso24.CSV	3.76	0.11	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
14	OB40El_Peceno40.CSV	3.85	0.81	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
15	OB40Glass_Buttes03.CSV	3.60	0.52	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
16	OB40Grasshopper_Flat13.CSV	3.76	0.58	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
17	OB40Gregory_Creek38.CSV	3.60	0.82	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
18	OB40Guadalupe_Victoria02.CSV	3.40	0.34	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
19	OB40Inman_Creek14.CSV	2.46	0.71	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
20	OB40KES_276_18.CSV	4.14	0.57	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
21	OB40KES_362_17.CSV	3.31	0.15	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
22	OB40La_Joya16.CSV	3.48	0.12	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
23	OB40McDaniel_Tank21.CSV	3.90	0.69	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
24	OB40Meydan_Tepe36.CSV	3.46	0.29	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
25	OB40Mono_Craters07.CSV	3.53	0.38	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
26	OB40Mule_Creek19.CSV	3.57	0.39	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
27	OB40Obsidian_Cliffs39.CSV	2.83	0.59	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
28	OB40Pachuca30.CSV	3.29	0.08	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
29	OB40Paredon34.CSV	3.91	0.26	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
30	OB40Polvadera31.CSV	3.98	0.31	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
31	OB40RS_Hill08.CSV	3.35	0.25	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
32	OB40San_Leonel32.CSV	3.56	0.17	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
33	OB40Sarikamis37.CSV	3.92	0.32	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
34	OB40Timber_Butte01.CSV	3.65	0.49	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
35	OB40Tucker_Hill11.CSV	3.50	0.54	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
36	OB40VNN-2_25.CSV	3.02	0.10	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
37	OB40West_New_Britain1_05.CSV	1.71	0.86	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

You can simply paste values from another spreadsheet here

CloudCal

127.0.0.1:3315

Lee

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Enter Values

Enter Concentrations

	pha	Ti.K.alpha	Mn.K.alpha	Fe.K.alpha	Co.K.alpha	Cu.K.alpha	Zn.K.alpha	Ga.K.alpha	As.K.alpha	Rb.K.alpha	Sr.K.alpha	Y.K.alpha	Zr.K.alpha	Nb.K.alpha	Pb.L.alpha	Th.L.alpha
1	1.08	0.08	0.05	0.87	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.00	0.01	0.00	0.00	0.00
2	4.99	0.78	0.11	6.85	0.00	0.00	0.01	0.00	0.00	0.00	0.03	0.00	0.01	0.00	0.00	0.00
3	0.32	0.05	0.03	1.17	0.00	0.00	0.03	0.00	0.00						0.00	0.00
4	0.10	0.12	0.16	2.74	0.00	0.00	0.02	0.00	0.00						0.00	0.00
5	0.13	0.10	0.05	1.72	0.00	0.00	0.01	0.00	0.00						0.00	0.00
6	0.18	0.10	0.05	2.33	0.00	0.00	0.02	0.00	0.00						0.00	0.00
7	0.61	0.11	0.03	0.93	0.00	0.00	0.00	0.00	0.00						0.00	0.00
8	0.25	0.05	0.04	0.71	0.00	0.00	0.01	0.00	0.00						0.00	0.00
9	0.42	0.11	0.04	1.18	0.00	0.00	0.01	0.00	0.00						0.00	0.00
10	0.47	0.03	0.03	0.81	0.00	0.00	0.01	0.00	0.00						0.00	0.00
11	0.58	0.05	0.04	0.53	0.00	0.00	0.00	0.00	0.00						0.00	0.00
12	0.63	0.14	0.03	1.04	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.02	0.00	0.00	0.00
13	0.11	0.08	0.02	1.94	0.00	0.00	0.02	0.00	0.00	0.02	0.00	0.02	0.11	0.01	0.00	0.00
14	0.81	0.05	0.09	0.61	0.00	0.00	0.01	0.00	0.00	0.02	0.03	0.00	0.01	0.00	0.00	0.00
15	0.52	0.06	0.03	0.62	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00
16	0.58	0.13	0.03	0.92	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.02	0.00	0.00	0.00
17	0.82	0.02	0.07	0.65	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00
18	0.34	0.06	0.05	0.43	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00
19	0.71	0.05	0.05	1.08	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00
20	0.57	0.31	0.11	2.34	0.00	0.00	0.01	0.00	0.00	0.02	0.01	0.01	0.10	0.03	0.00	0.00
21	0.15	0.16	0.18	5.37	0.00	0.00	0.06	0.00	0.00	0.04	0.00	0.04	0.31	0.06	0.00	0.01
22	0.12	0.09	0.06	1.89	0.00	0.00	0.01	0.00	0.00	0.02	0.00	0.01	0.07	0.01	0.00	0.00
23	0.69	0.16	0.06	1.00	0.00	0.00	0.01	0.00	0.00	0.02	0.02	0.00	0.02	0.00	0.00	0.00
24	0.29	0.05	0.05	0.93	0.00	0.00	0.01	0.00	0.00	0.02	0.00	0.01	0.03	0.00	0.00	0.00
25	0.38	0.04	0.04	0.78	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.01	0.00	0.00	0.00
26	0.39	0.04	0.04	0.66	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.01	0.00	0.00	0.00
27	0.59	0.06	0.03	0.73	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00
28	0.08	0.11	0.11	1.63	0.00	0.00	0.02	0.00	0.00	0.02	0.00	0.01	0.09	0.01	0.00	0.00
29	0.26	0.08	0.04	0.85	0.00	0.00	0.01	0.00	0.00	0.02	0.00	0.00	0.02	0.00	0.00	0.00
30	0.31	0.04	0.04	0.38	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00
31	0.25	0.02	0.04	0.72	0.00	0.00	0.01	0.00	0.00	0.04	0.00	0.01	0.02	0.02	0.00	0.00
32	0.17	0.06	0.03	1.24	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.01	0.04	0.00	0.00	0.00
33	0.32	0.05	0.04	0.55	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00
34	0.49	0.03	0.08	0.37	0.00	0.00	0.01	0.00	0.00	0.02	0.00	0.00	0.01	0.00	0.00	0.00
35	0.54	0.03	0.05	0.47	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00
36	0.10	0.07	0.12	4.38	0.00	0.00	0.03	0.00	0.00	0.02	0.00	0.01	0.11	0.01	0.00	0.00
37	0.86	0.11	0.06	0.86	0.00	0.00	0.01	0.00	0.00	0.00	0.02	0.00	0.01	0.00	0.00	0.00

Even though data rounds to two decimal places here, the values you paste are captured

CloudCal

127.0.0.1:3315

Lee

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Enter Values

When the table is complete, you can click ‘Enter Values’

Enter Concentrations

	pha	Ti.K.alpha	Mn.K.alpha	Fe.K.alpha	Co.K.alpha	Cu.K.alpha	Zn.K.alpha	Ga.K.alpha	As.K.alpha	Rb.K.alpha	Sr.K.alpha	Y.K.alpha	Zr.K.alpha	Nb.K.alpha	Pb.L.alpha	Th.L.alpha
1	1.08	0.08	0.05	0.87	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.00	0.01	0.00	0.00	0.00
2	4.99	0.78	0.11	6.85	0.00	0.00	0.01	0.00	0.00	0.00	0.03	0.00	0.01	0.00	0.00	0.00
3	0.32	0.05	0.03	1.17	0.00	0.00	0.03	0.00	0.00	0.03	0.00	0.02	0.03	0.03	0.00	0.00
4	0.10	0.12	0.16	2.74	0.00	0.00	0.02	0.00	0.00	0.01	0.00	0.01	0.04	0.00	0.00	0.00
5	0.13	0.10	0.05	1.72	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.01	0.06	0.00	0.00	0.00
6	0.18	0.10	0.05	2.33	0.00	0.00	0.02	0.00	0.00	0.03	0.00	0.01	0.11	0.01	0.00	0.00
7	0.61	0.11	0.03	0.93	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.02	0.00	0.00	0.00
8	0.25	0.05	0.04	0.71	0.00	0.00	0.01	0.00	0.00	0.02	0.00	0.00	0.02	0.00	0.00	0.00
9	0.42	0.11	0.04	1.18	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.01	0.03	0.00	0.00	0.00
10	0.47	0.03	0.03	0.81	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.00
11	0.58	0.05	0.04	0.53	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00
12	0.63	0.14	0.03	1.04	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.02	0.00	0.00	0.00
13	0.11	0.08	0.02	1.94	0.00	0.00	0.02	0.00	0.00	0.02	0.00	0.02	0.11	0.01	0.00	0.00
14	0.81	0.05	0.09	0.61	0.00	0.00	0.01	0.00	0.00	0.02	0.03	0.00	0.01	0.00	0.00	0.00
15	0.52	0.06	0.03	0.62	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00
16	0.58	0.13	0.03	0.92	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.02	0.00	0.00	0.00
17	0.82	0.02	0.07	0.65	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00
18	0.34	0.06	0.05	0.43	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00
19	0.71	0.05	0.05	1.08	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00
20	0.57	0.31	0.11	2.34	0.00	0.00	0.01	0.00	0.00	0.02	0.01	0.01	0.10	0.03	0.00	0.00
21	0.15	0.16	0.18	5.37	0.00	0.00	0.06	0.00	0.00	0.04	0.00	0.04	0.31	0.06	0.00	0.01
22	0.12	0.09	0.06	1.89	0.00	0.00	0.01	0.00	0.00	0.02	0.00	0.01	0.07	0.01	0.00	0.00
23	0.69	0.16	0.06	1.00	0.00	0.00	0.01	0.00	0.00	0.02	0.02	0.00	0.02	0.00	0.00	0.00
24	0.29	0.05	0.05	0.93	0.00	0.00	0.01	0.00	0.00	0.02	0.00	0.01	0.03	0.00	0.00	0.00
25	0.38	0.04	0.04	0.78	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.01	0.00	0.00	0.00
26	0.39	0.04	0.04	0.66	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.01	0.00	0.00	0.00
27	0.59	0.06	0.03	0.73	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00
28	0.08	0.11	0.11	1.63	0.00	0.00	0.02	0.00	0.00	0.02	0.00	0.01	0.09	0.01	0.00	0.00
29	0.26	0.08	0.04	0.85	0.00	0.00	0.01	0.00	0.00	0.02	0.00	0.00	0.02	0.00	0.00	0.00
30	0.31	0.04	0.04	0.38	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00
31	0.25	0.02	0.04	0.72	0.00	0.00	0.01	0.00	0.00	0.04	0.00	0.01	0.02	0.02	0.00	0.00
32	0.17	0.06	0.03	1.24	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.01	0.04	0.00	0.00	0.00
33	0.32	0.05	0.04	0.55	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00
34	0.49	0.03	0.08	0.37	0.00	0.00	0.01	0.00	0.00	0.02	0.00	0.00	0.01	0.00	0.00	0.00
35	0.54	0.03	0.05	0.47	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00
36	0.10	0.07	0.12	4.38	0.00	0.00	0.03	0.00	0.00	0.02	0.00	0.01	0.11	0.01	0.00	0.00
37	0.86	0.11	0.06	0.86	0.00	0.00	0.01	0.00	0.00	0.00	0.02	0.00	0.01	0.00	0.00	0.00

CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Plot | Update | Save

Element

K.K.alpha

Calibration Curve

- Linear
- Non-Linear
- Lucas-Tooth

Normalization

- Time
- Total Counts
- Compton

Min

18.5

Max

19.5

Intercept

- [x] K.K.alpha
- [ ] Ca.K.alpha
- [ ] Ti.K.alpha
- [ ] Mn.K.alpha
- [ ] Fe.K.alpha
- [ ] Co.K.alpha
- [ ] Cu.K.alpha
- [ ] Zn.K.alpha
- [ ] Ga.K.alpha

When the table is complete, you can click 'Enter Values'

View Curves | Diagnostics | Standards

Error: arguments imply differing number of rows: 40, 0

You may see error when you begin - this is fine unless it persists after you begin calibration

CloudCal

127.0.0.1:3315

Lee

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Plot | Update | Save

Element

K.K.alpha

- As.K.alpha
- Rb.K.alpha
- Sr.K.alpha
- Y.K.alpha
- Zr.K.alpha
- Nb.K.alpha
- Pb.L.alpha
- Th.L.alpha

Compton

Min

18.5

Max

19.5

Intercept

- [x] K.K.alpha
- [ ] Ca.K.alpha
- [ ] Ti.K.alpha
- [ ] Mn.K.alpha
- [ ] Fe.K.alpha
- [ ] Co.K.alpha
- [ ] Cu.K.alpha
- [ ] Zn.K.alpha
- [ ] Ga.K.alpha

View Curves | Diagnostics | Standards

Error: arguments imply differing number of rows: 40, 0

Select the element line you would like to calibrate

CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Plot | Update | Save

Element

Zr.K.alpha

Calibration Curve

- Linear
- Non-Linear
- Lucas-Tooth

Normalization

- Time
- Total Counts
- Compton

Min

18.5

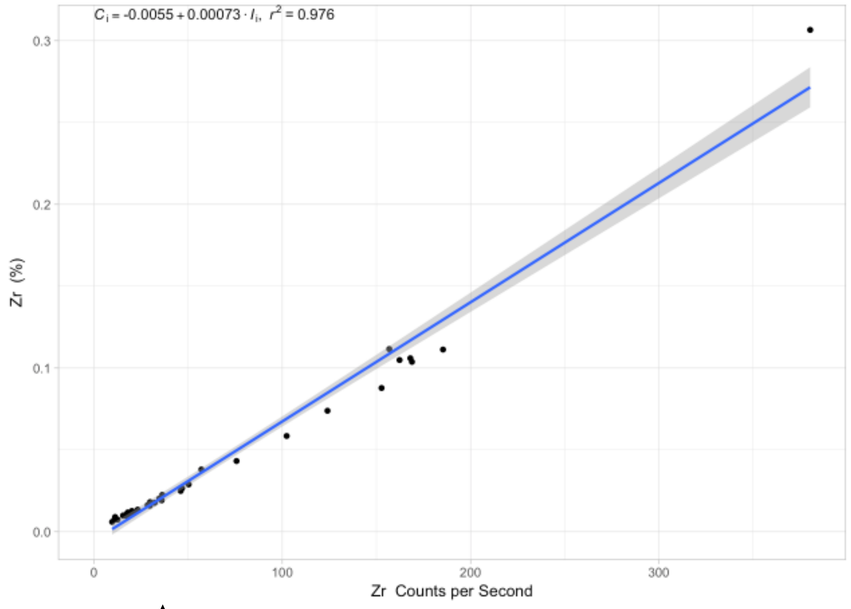
Max

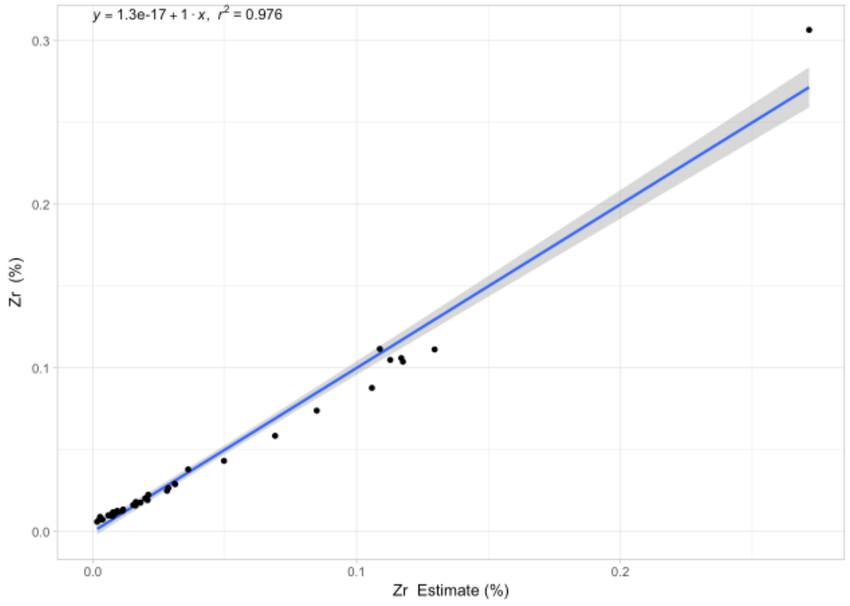
19.5

Intercept

- K.K.alpha
- Ca.K.alpha
- Ti.K.alpha
- Mn.K.alpha
- Fe.K.alpha
- Co.K.alpha
- Cu.K.alpha
- Zn.K.alpha
- Ga.K.alpha

View Curves | Diagnostics | Standards





The plot on the left is the calibration curve, with photon counts on the x-axis and known values on the y-axis

CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Plot | Update | Save

Element

Zr.K.alpha

Calibration Curve

- Linear
- Non-Linear
- Lucas-Tooth

Normalization

- Time
- Total Counts
- Compton

Min

18.5

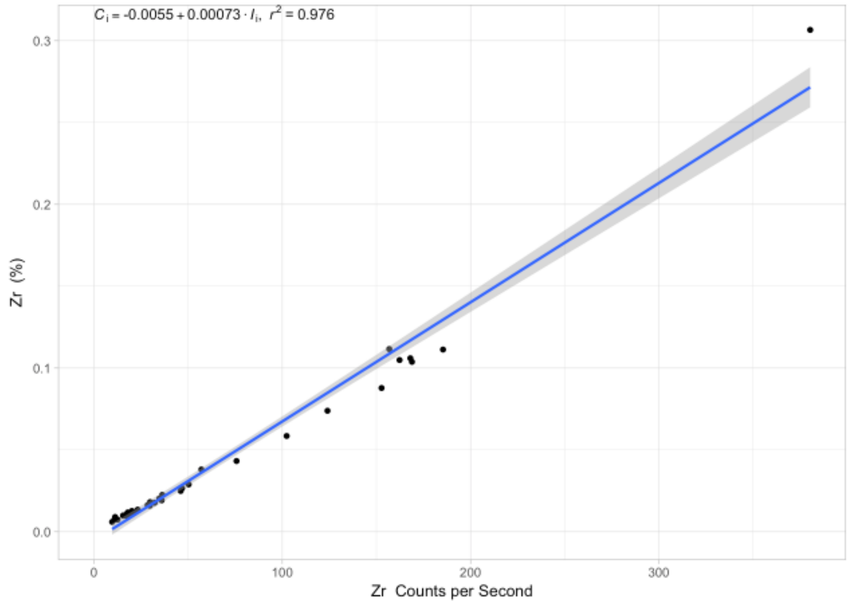
Max

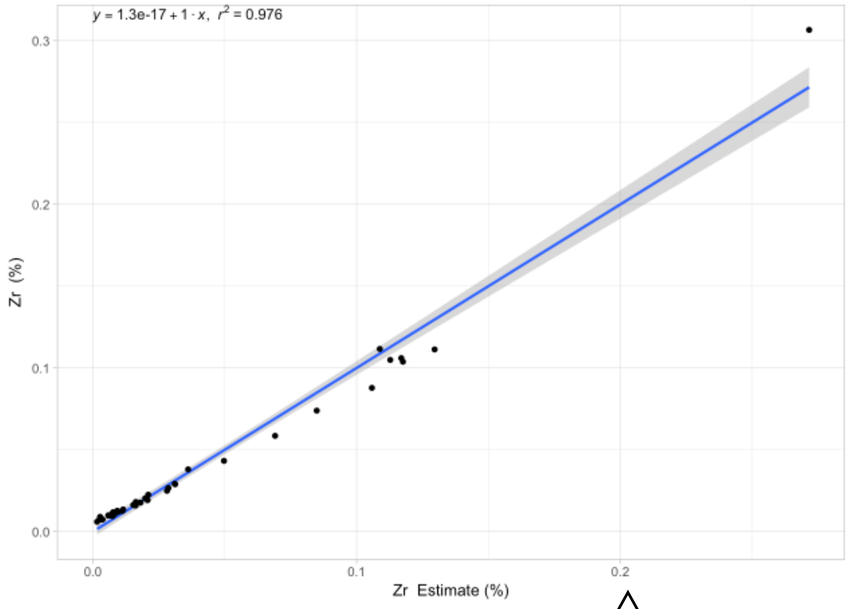
19.5

Intercept

- K.K.alpha
- Ca.K.alpha
- Ti.K.alpha
- Mn.K.alpha
- Fe.K.alpha
- Co.K.alpha
- Cu.K.alpha
- Zn.K.alpha
- Ga.K.alpha

View Curves | Diagnostics | Standards





The plot on the right is the validation plot - with XRF estimates on the x-axis and known values on the y-axis

CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Plot | Update | Save

Element

Zr.K.alpha

Calibration Curve

- Linear
- Non-Linear
- Lucas-Tooth

Normalization

- Time
- Total Counts
- Compton

Min

18.5

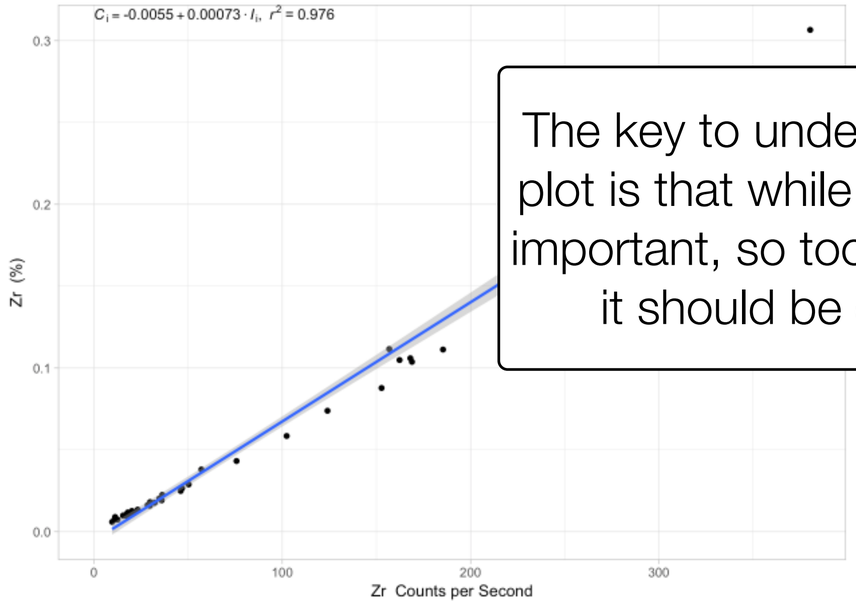
Max

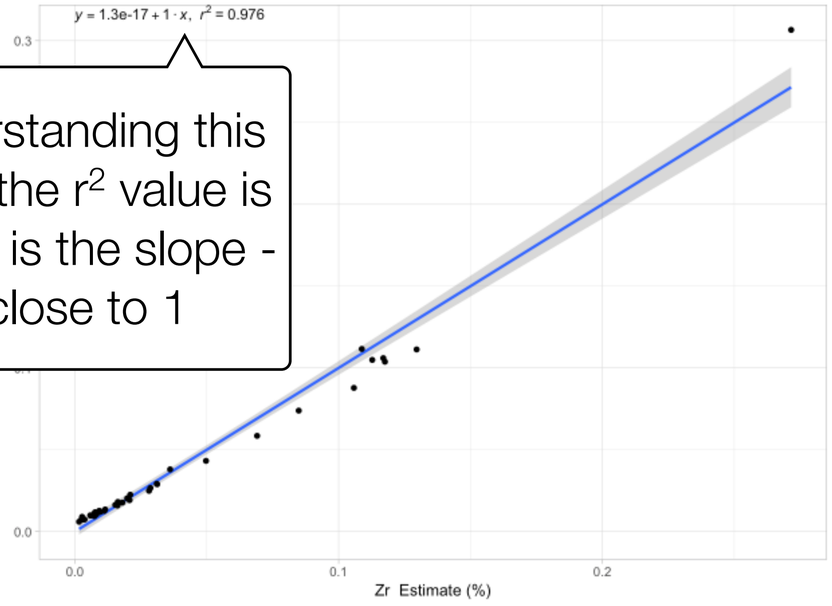
19.5

Intercept

- K.K.alpha
- Ca.K.alpha
- Ti.K.alpha
- Mn.K.alpha
- Fe.K.alpha
- Co.K.alpha
- Cu.K.alpha
- Zn.K.alpha
- Ga.K.alpha

View Curves | Diagnostics | Standards





The key to understanding this plot is that while the r^2 value is important, so too is the slope - it should be close to 1

CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Plot | Update | Save

Element

Zr.K.alpha

Calibration Curve

- Linear
- Non-Linear
- Lucas-Tooth

Currently, we are using a simple linear calibration - no corrections

Normalization

- Time
- Total Counts
- Compton

We are also only normalizing data to time

Min

18.5

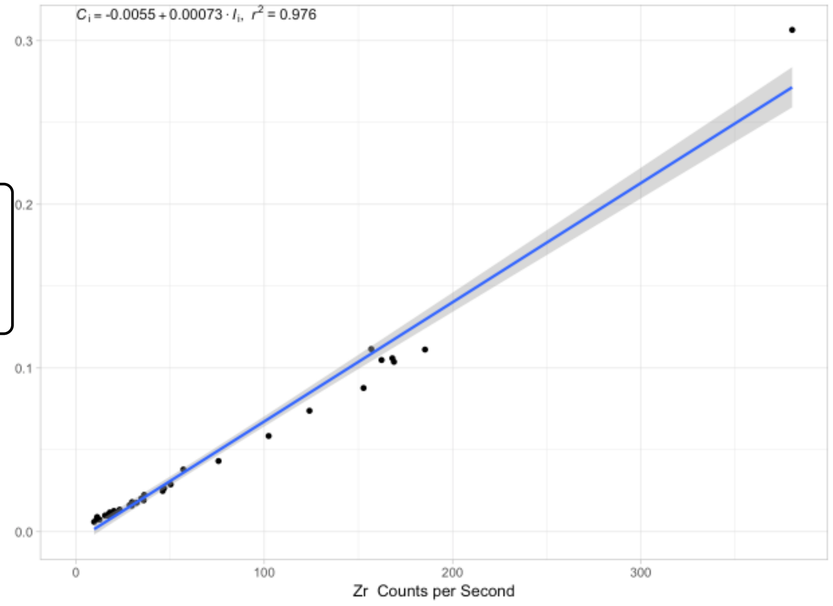
Max

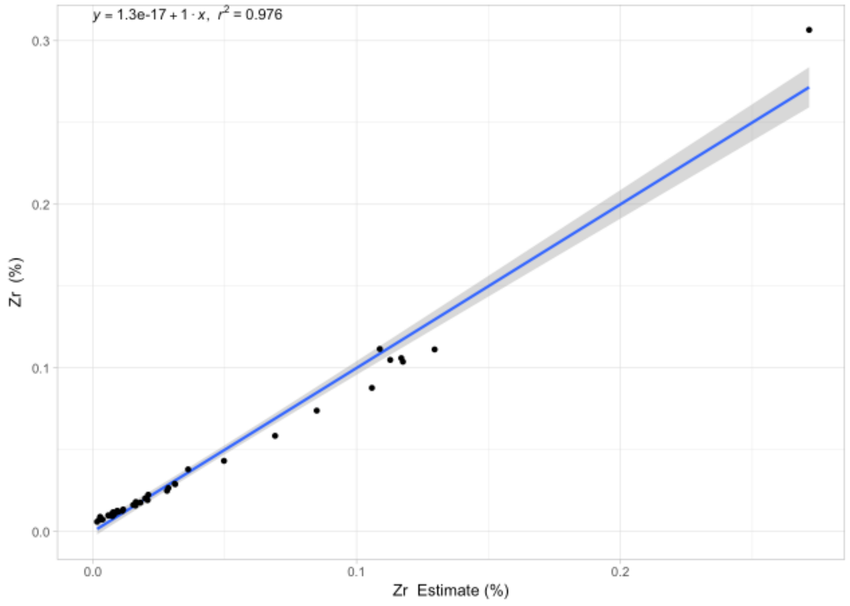
19.5

Intercept

- K.K.alpha
- Ca.K.alpha
- Ti.K.alpha
- Mn.K.alpha
- Fe.K.alpha
- Co.K.alpha
- Cu.K.alpha
- Zn.K.alpha
- Ga.K.alpha

View Curves | Diagnostics | Standards





CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Plot | Update | Save

Element

Zr.K.alpha

Calibration Curve

- Linear
- Non-Linear
- Lucas-Tooth

Switching to a non-linear curve simply uses a quadratic regression

Normalization

- Time
- Total Counts
- Compton

Min

18.5

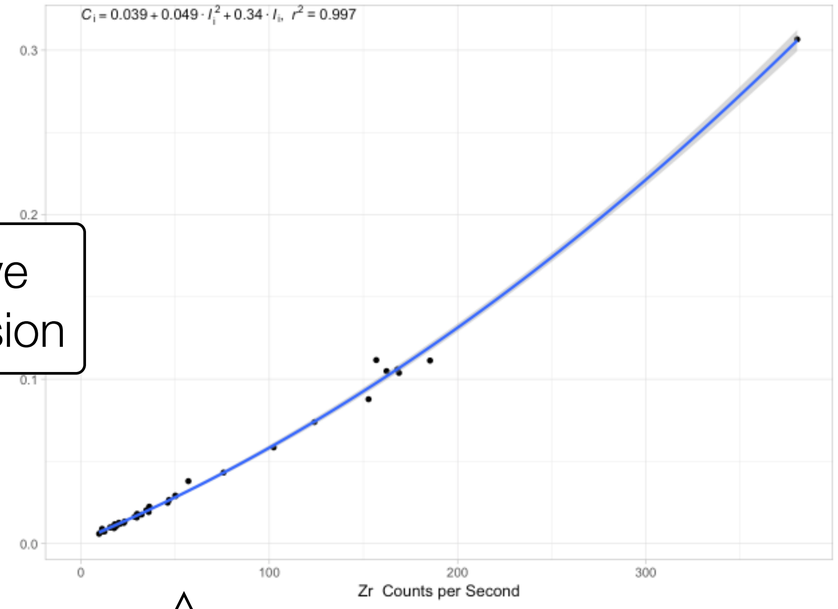
Max

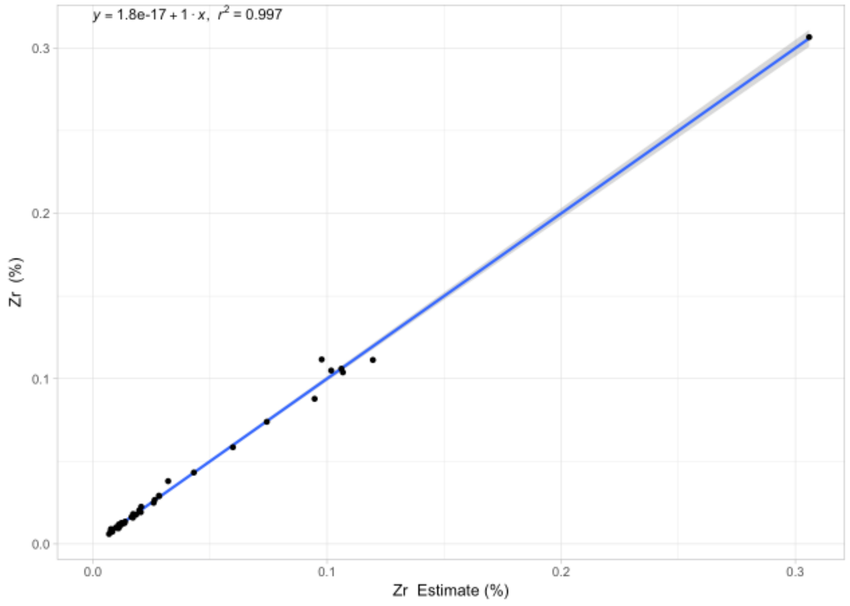
19.5

Intercept

- K.K.alpha
- Ca.K.alpha
- Ti.K.alpha
- Mn.K.alpha
- Fe.K.alpha
- Co.K.alpha
- Cu.K.alpha
- Zn.K.alpha
- Ga.K.alpha

View Curves | Diagnostics | Standards





Note that while the cal curve plots is curvilinear, the validation plot remains linear

CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Plot | Update | Save

Element

Zr.K.alpha

Calibration Curve

- Linear
- Non-Linear
- Lucas-Tooth

Lukas-Tooth is the most powerful cal engine - it enables the use of other elements as corrections

Normalization

- Time
- Total Counts
- Compton

Min

18.5

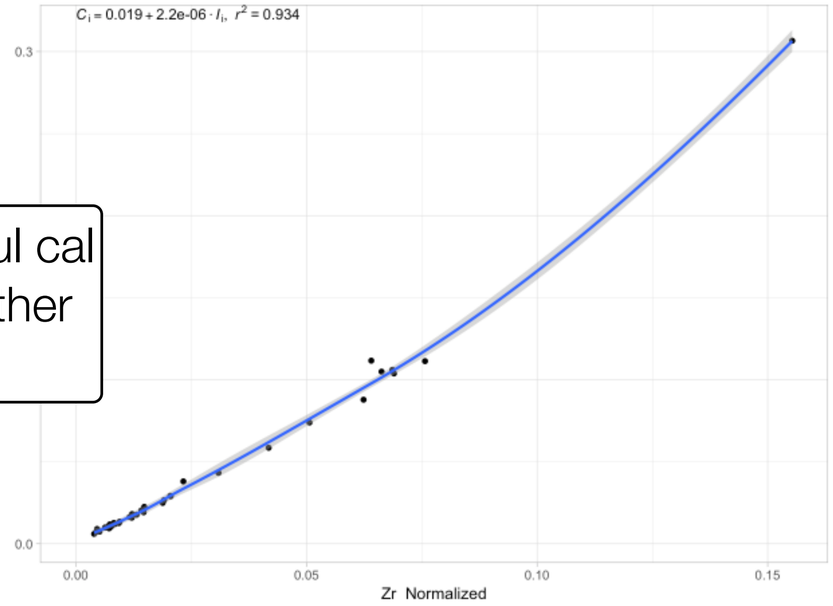
Max

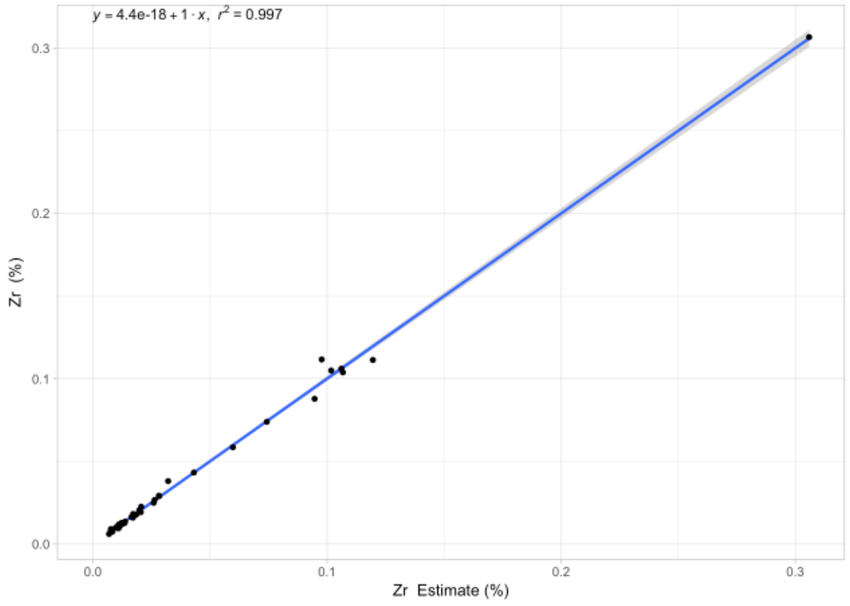
19.5

Intercept

- K.K.alpha
- Ca.K.alpha
- Ti.K.alpha
- Mn.K.alpha
- Fe.K.alpha
- Co.K.alpha
- Cu.K.alpha
- Zn.K.alpha
- Ga.K.alpha

View Curves | Diagnostics | Standards





CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Plot | Update | Save

Element

Zr.K.alpha

Calibration Curve

- Linear
- Non-Linear
- Lucas-Tooth

Normalization

- Time
- Total Counts
- Compton

Normalizing to 'Total Counts' means we are using the peak as % of the total

Min

18.5

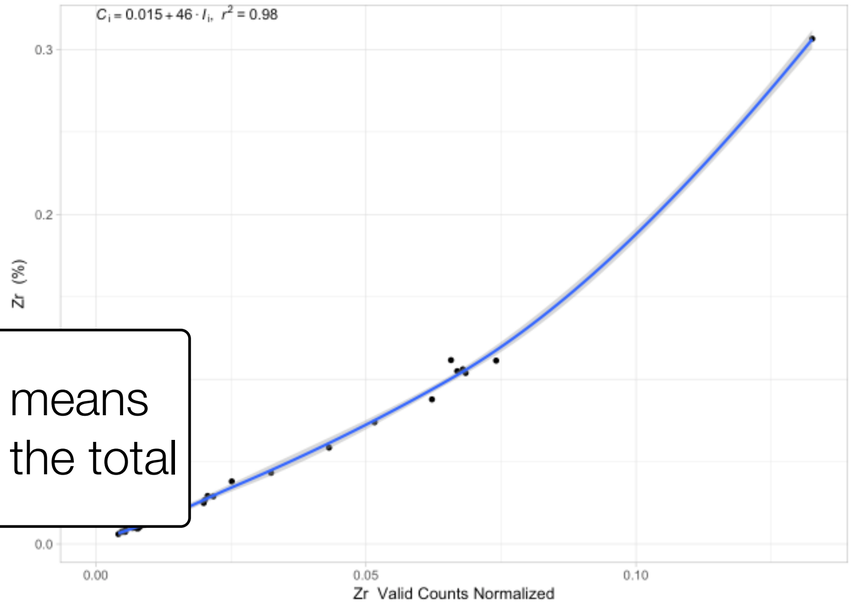
Max

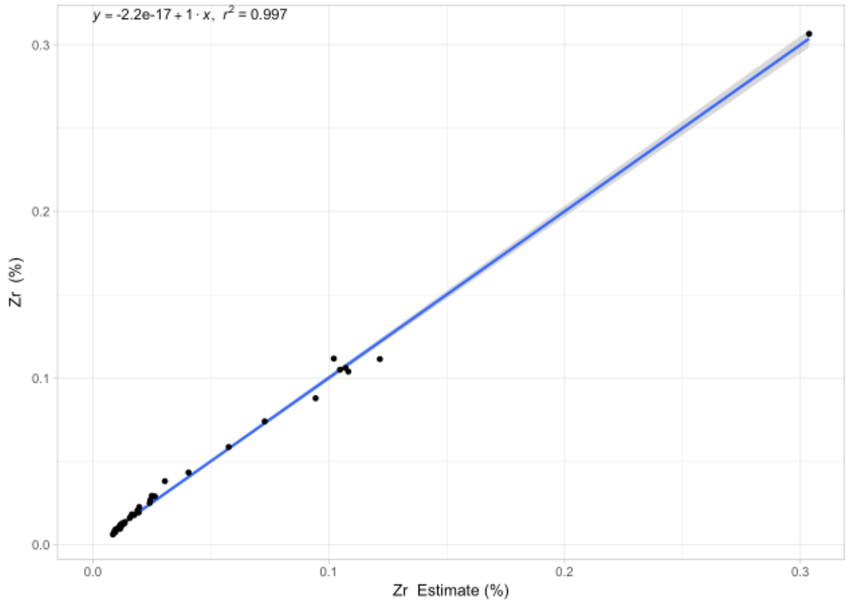
19.5

Intercept

- K.K.alpha
- Ca.K.alpha
- Ti.K.alpha
- Mn.K.alpha
- Fe.K.alpha
- Co.K.alpha
- Cu.K.alpha
- Zn.K.alpha
- Ga.K.alpha

View Curves | Diagnostics | Standards





CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Plot | Update | Save

Element

Zr.K.alpha

Calibration Curve

- Linear
- Non-Linear
- Lucas-Tooth

Normalization

- Time
- Total Counts
- Compton

Normalizing to Compton is, strictly speaking, normalizing to the inelastic scatter from the x-ray tube

Min

18.5

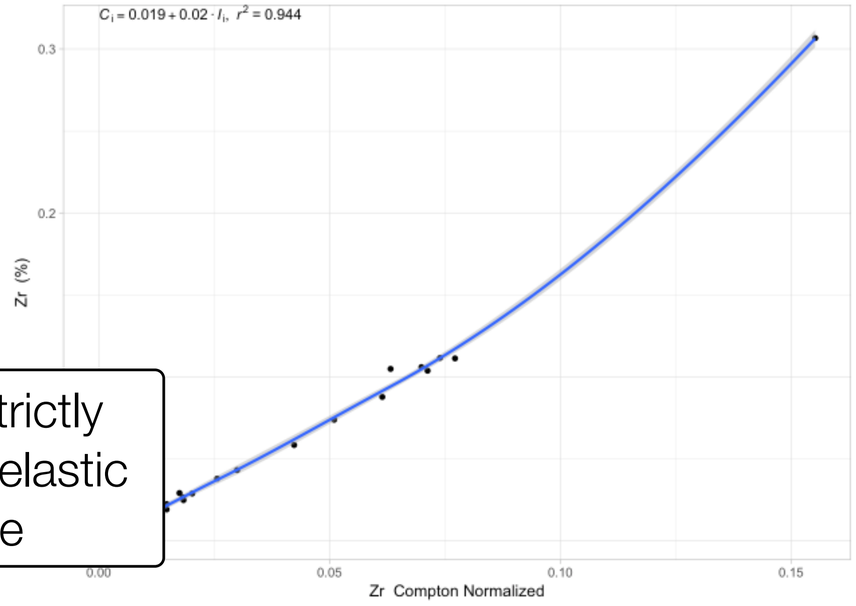
Max

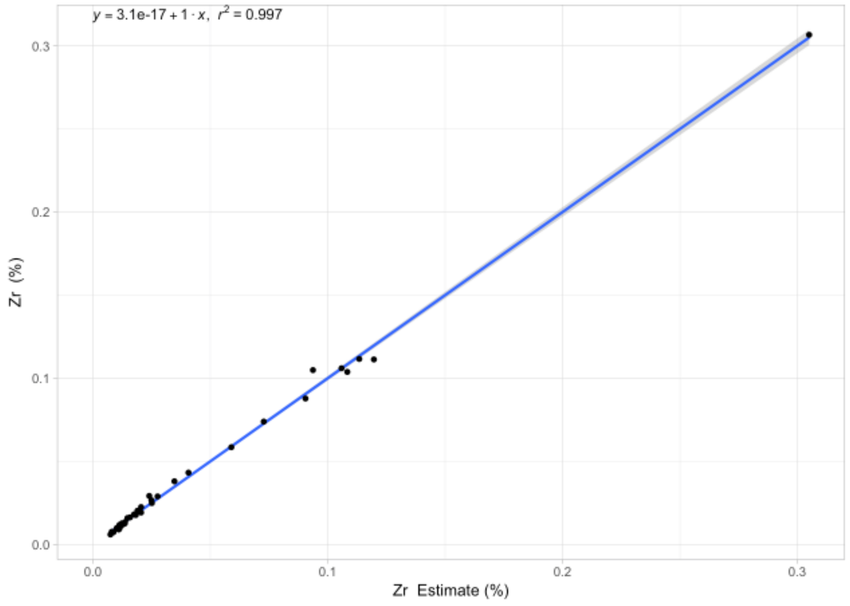
19.5

Intercept

- K.K.alpha
- Ca.K.alpha
- Ti.K.alpha
- Mn.K.alpha
- Fe.K.alpha
- Co.K.alpha
- Cu.K.alpha
- Zn.K.alpha
- Ga.K.alpha

View Curves | Diagnostics | Standards





CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Plot | Update | Save

Element

Zr.K.alpha

Calibration Curve

- Linear
- Non-Linear
- Lucas-Tooth

Normalization

- Time
- Total Counts
- Compton

Min

18.5

Max

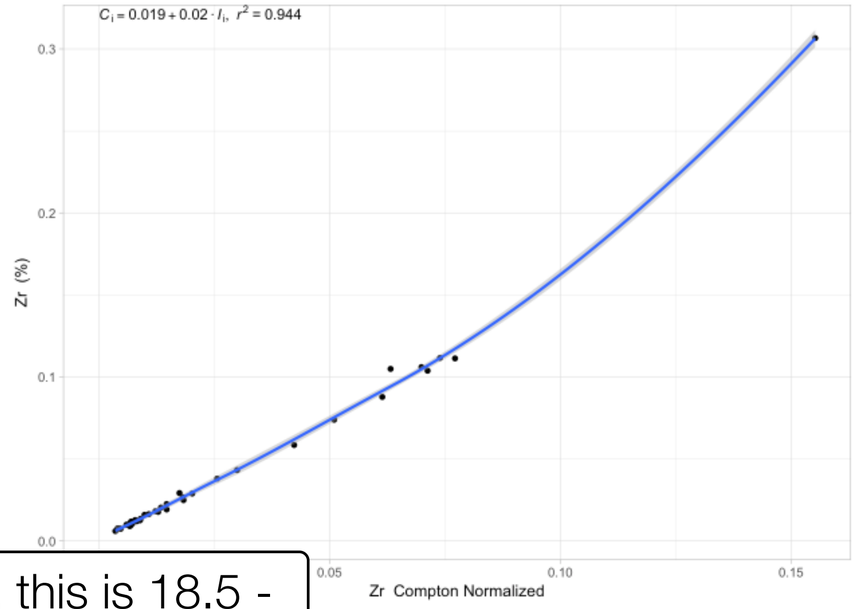
19.5

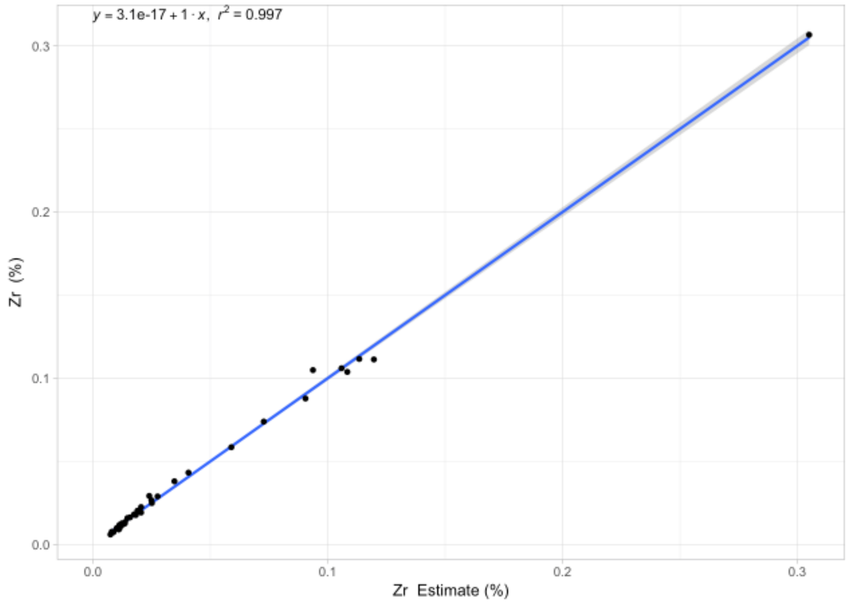
Intercept

- K.K.alpha
- Ca.K.alpha
- Ti.K.alpha
- Mn.K.alpha
- Fe.K.alpha
- Co.K.alpha
- Cu.K.alpha
- Zn.K.alpha
- Ga.K.alpha

For Rhodium x-ray tubes, this is 18.5 - 19.5 keV, though this can shift depending on the density of your sample

View Curves | Diagnostics | Standards





…however, you can normalize to any range using this menu. You can even do this separately for each element

CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Plot | Update | Save

Element

Zr.K.alpha

Calibration Curve

- Linear
- Non-Linear
- Lucas-Tooth

Normalization

- Time
- Total Counts
- Compton

Min

6

Max

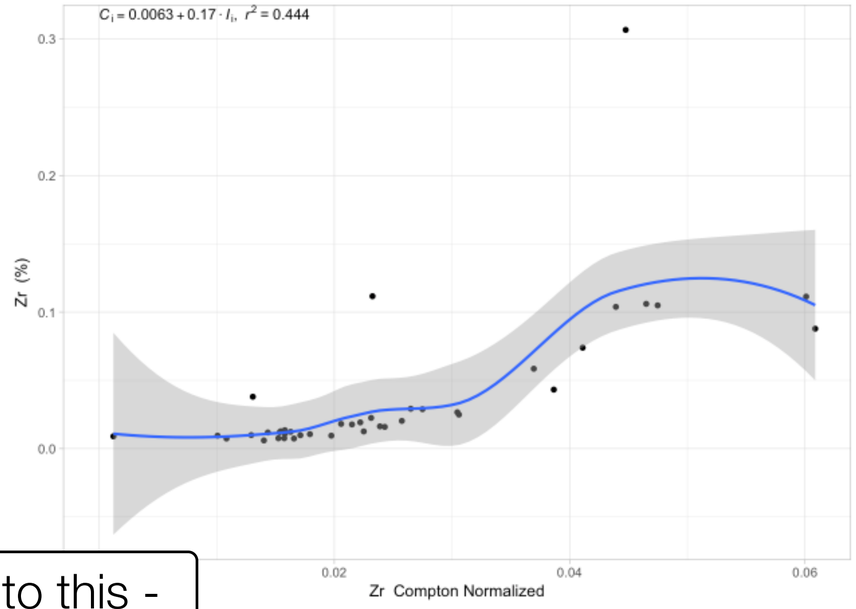
7

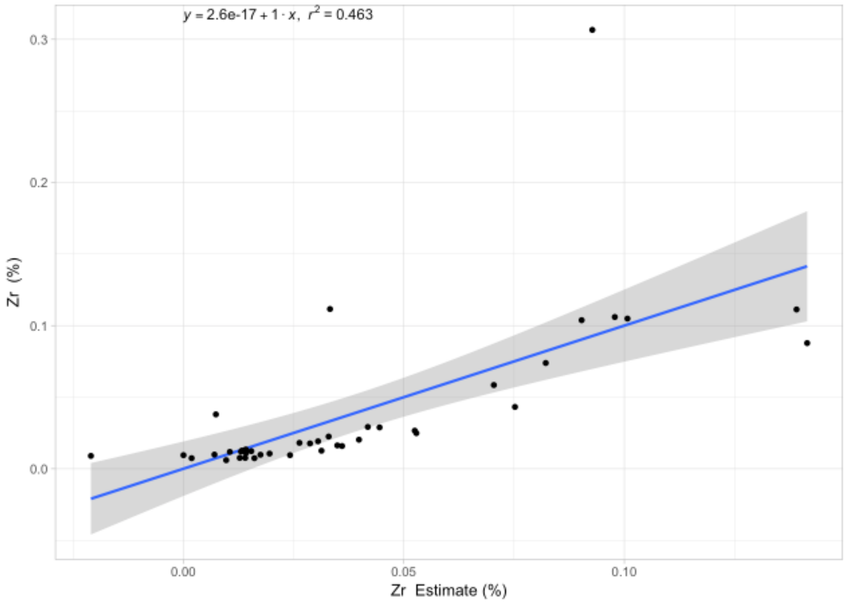
Intercept

- K.K.alpha
- Ca.K.alpha
- Ti.K.alpha
- Mn.K.alpha
- Fe.K.alpha
- Co.K.alpha
- Cu.K.alpha
- Zn.K.alpha
- Ga.K.alpha

There are consequences to this - choosing a bad range can disrupt your calibration quality

View Curves | Diagnostics | Standards





CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Plot | Update | Save

Element

Zr.K.alpha

Calibration Curve

- Linear
- Non-Linear
- Lucas-Tooth

Normalization

- Time
- Total Counts
- Compton

Min

19.5

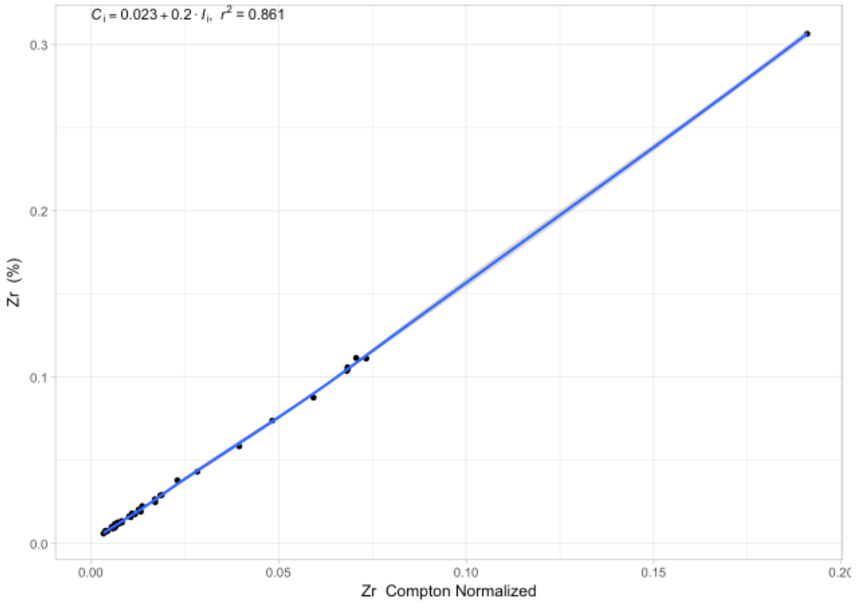
Max

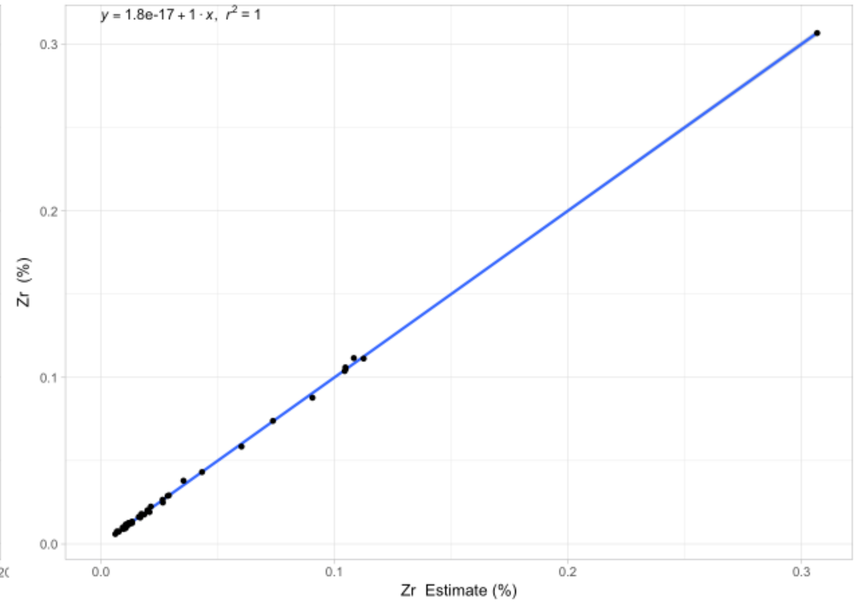
22

Intercept

- K.K.alpha
- Ca.K.alpha
- Ti.K.alpha
- Mn.K.alpha
- Fe.K.alpha
- Co.K.alpha
- Cu.K.alpha
- Zn.K.alpha
- Ga.K.alpha

View Curves | Diagnostics | Standards





For this element and this set, we have hit the theoretical best performance - an r^2 of 1, a slope of 1. This is not common

CloudCal

127.0.0.1:3315

Mn.K.alpha
- [ ] Fe.K.alpha
- [ ] Co.K.alpha
- [ ] Cu.K.alpha
- [ ] Zn.K.alpha
- [ ] Ga.K.alpha
- [ ] As.K.alpha
- [ ] Rb.K.alpha
- [ ] Sr.K.alpha
- [ ] Y.K.alpha
- [x] Zr.K.alpha
- [ ] Nb.K.alpha
- [ ] Pb.L.alpha
- [ ] Th.L.alpha
- [ ] U.L.alpha
- [ ] None

Slope

- [ ] K.K.alpha
- [ ] Ca.K.alpha
- [ ] Ti.K.alpha
- [ ] Mn.K.alpha
- [ ] Fe.K.alpha
- [ ] Co.K.alpha
- [ ] Cu.K.alpha
- [ ] Zn.K.alpha
- [ ] Ga.K.alpha
- [ ] As.K.alpha
- [ ] Rb.K.alpha
- [x] Sr.K.alpha
- [ ] Y.K.alpha
- [x] Zr.K.alpha
- [ ] Nb.K.alpha
- [ ] Pb.L.alpha
- [ ] Th.L.alpha
- [ ] U.L.alpha
- [ ] None

Nonetheless, this element can still be influenced by an overlap with Sr - you can add that as a slope or intercept correction

CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Plot | Update | Save

To show the effects of your corrections, click on 'Plot'

Calibration Curve

- Linear
- Non-Linear
- Lucas-Tooth

Normalization

- Time
- Total Counts
- Compton

Min

19.5

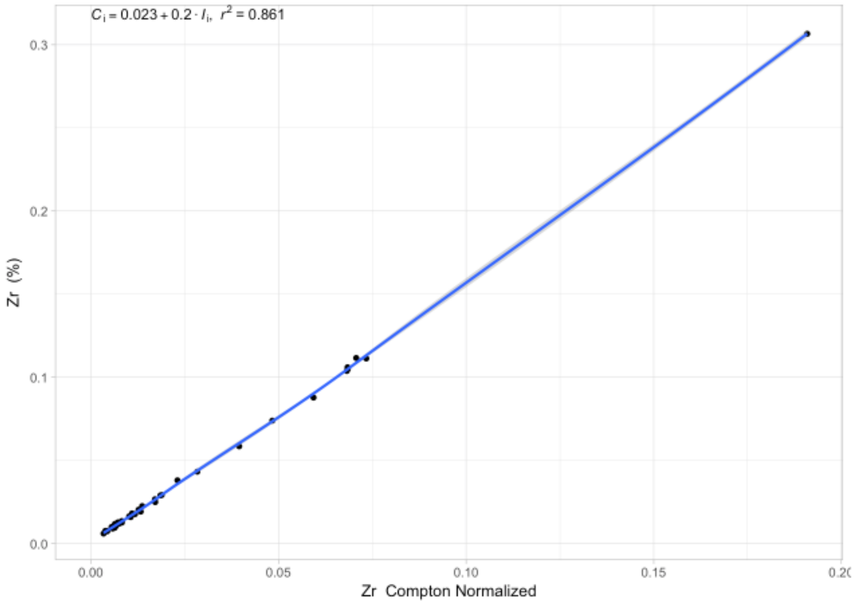
Max

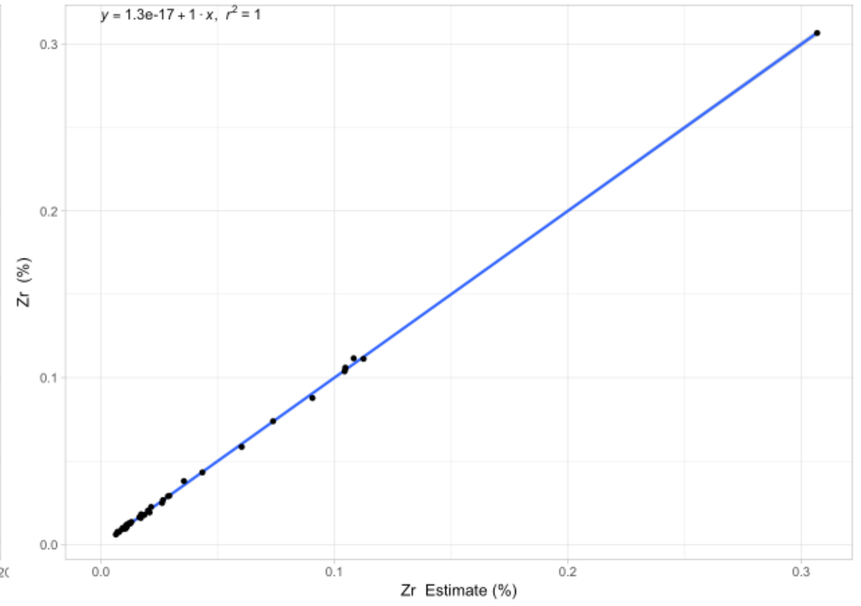
22

Intercept

- K.K.alpha
- Ca.K.alpha
- Ti.K.alpha
- Mn.K.alpha
- Fe.K.alpha
- Co.K.alpha
- Cu.K.alpha
- Zn.K.alpha
- Ga.K.alpha

View Curves | Diagnostics | Standards





CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Plot | Update | Save

If you are satisfied, you can click 'Update' to commit these changes

Element

Zr.K.alph

Calibration Curve

- Linear
- Non-Linear
- Lucas-Tooth

Normalization

- Time
- Total Counts
- Compton

Min

19.5

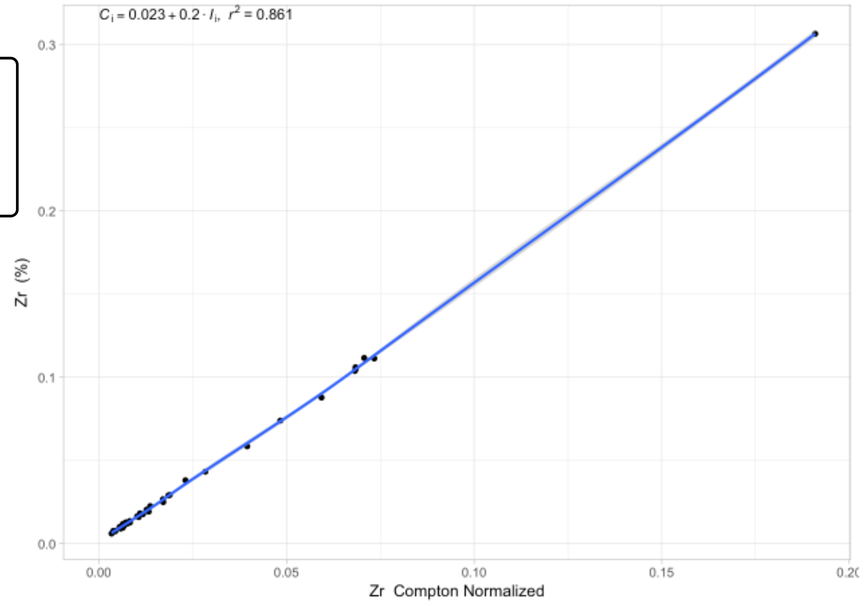
Max

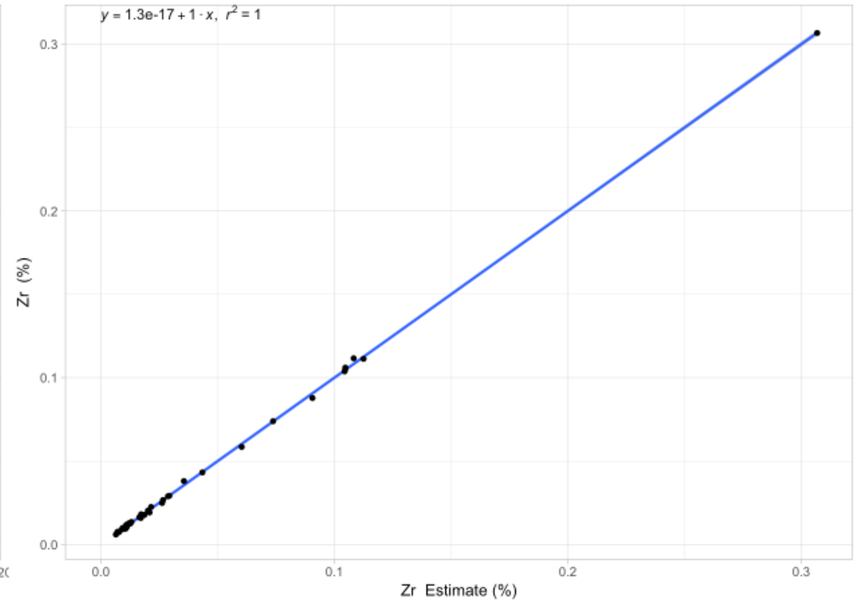
22

Intercept

- K.K.alpha
- Ca.K.alpha
- Ti.K.alpha
- Mn.K.alpha
- Fe.K.alpha
- Co.K.alpha
- Cu.K.alpha
- Zn.K.alpha
- Ga.K.alpha

View Curves | Diagnostics | Standards





CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Plot | Update | Save

Element

Rb.K.alpha

Calibration Curve

- Linear
- Non-Linear
- Lucas-Tooth

Normalization

- Time
- Total Counts
- Compton

Min

19.5

Max

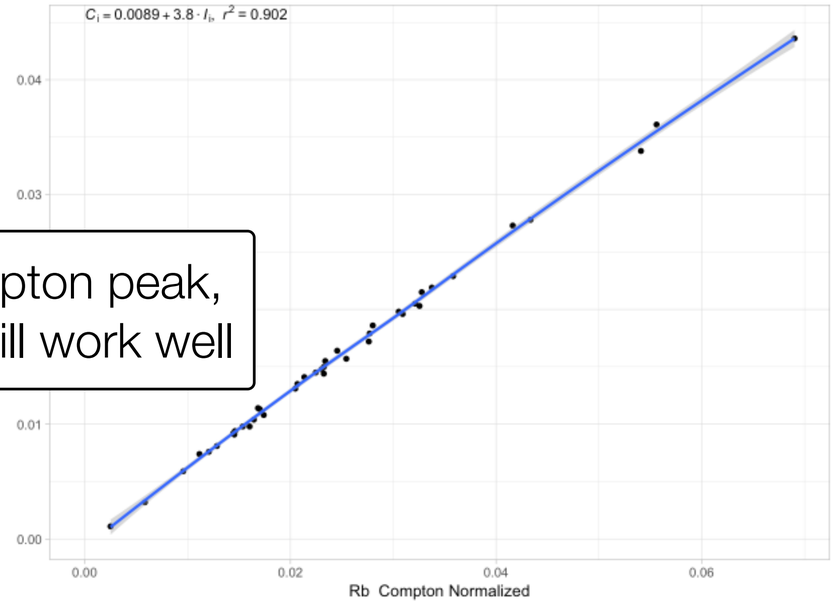
22

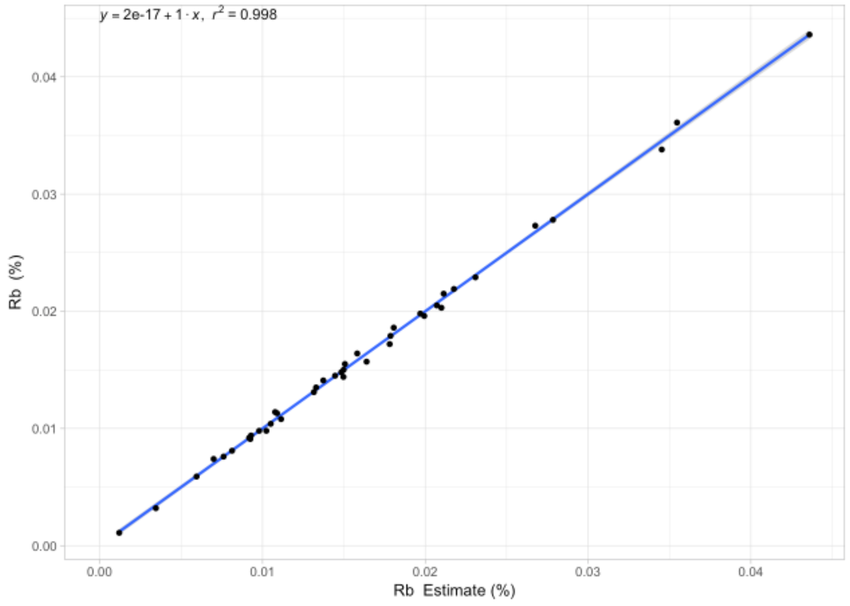
Intercept

- K.K.alpha
- Ca.K.alpha
- Ti.K.alpha
- Mn.K.alpha
- Fe.K.alpha
- Co.K.alpha
- Cu.K.alpha
- Zn.K.alpha
- Ga.K.alpha

For elements near the Compton peak, that form of normalization will work well

View Curves | Diagnostics | Standards





CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Plot | Update | Save

Element

K.K.alpha

Calibration Curve

- Linear
- Non-Linear
- Lucas-Tooth

Normalization

- Time
- Total Counts
- Compton

Min

19.5

Max

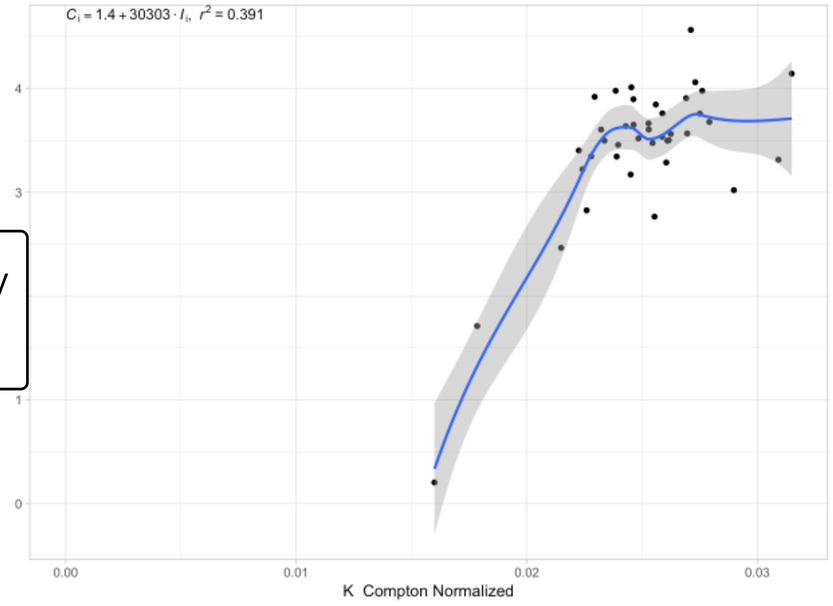
22

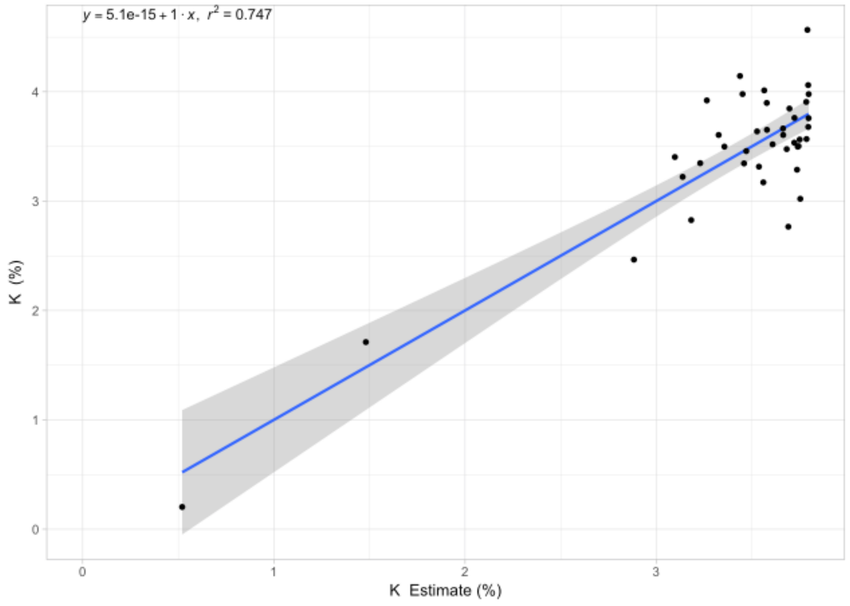
Intercept

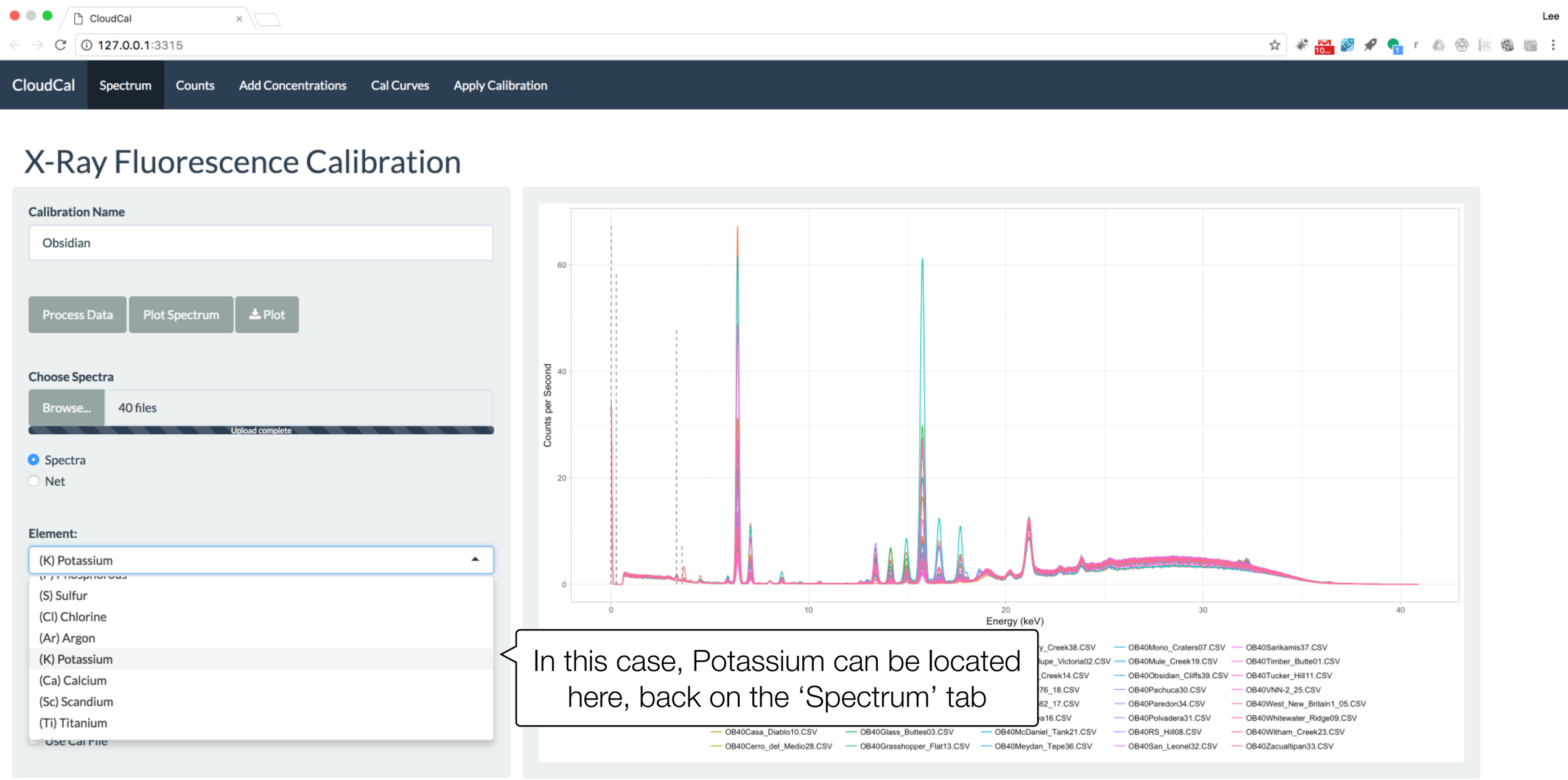
- [x] K.K.alpha
- [ ] Ca.K.alpha
- [ ] Ti.K.alpha
- [ ] Mn.K.alpha
- [ ] Fe.K.alpha
- [ ] Co.K.alpha
- [ ] Cu.K.alpha
- [ ] Zn.K.alpha
- [ ] Ga.K.alpha

For other elements, this may not work well however

View Curves | Diagnostics | Standards







In this case, Potassium can be located here, back on the ‘Spectrum’ tab

CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

X-Ray Fluorescence Calibration

Calibration Name

Obsidian

Process Data | Plot Spectrum | Plot

Choose Spectra

Browse... 40 files

Upload complete

- (•) Spectra
- ( ) Net

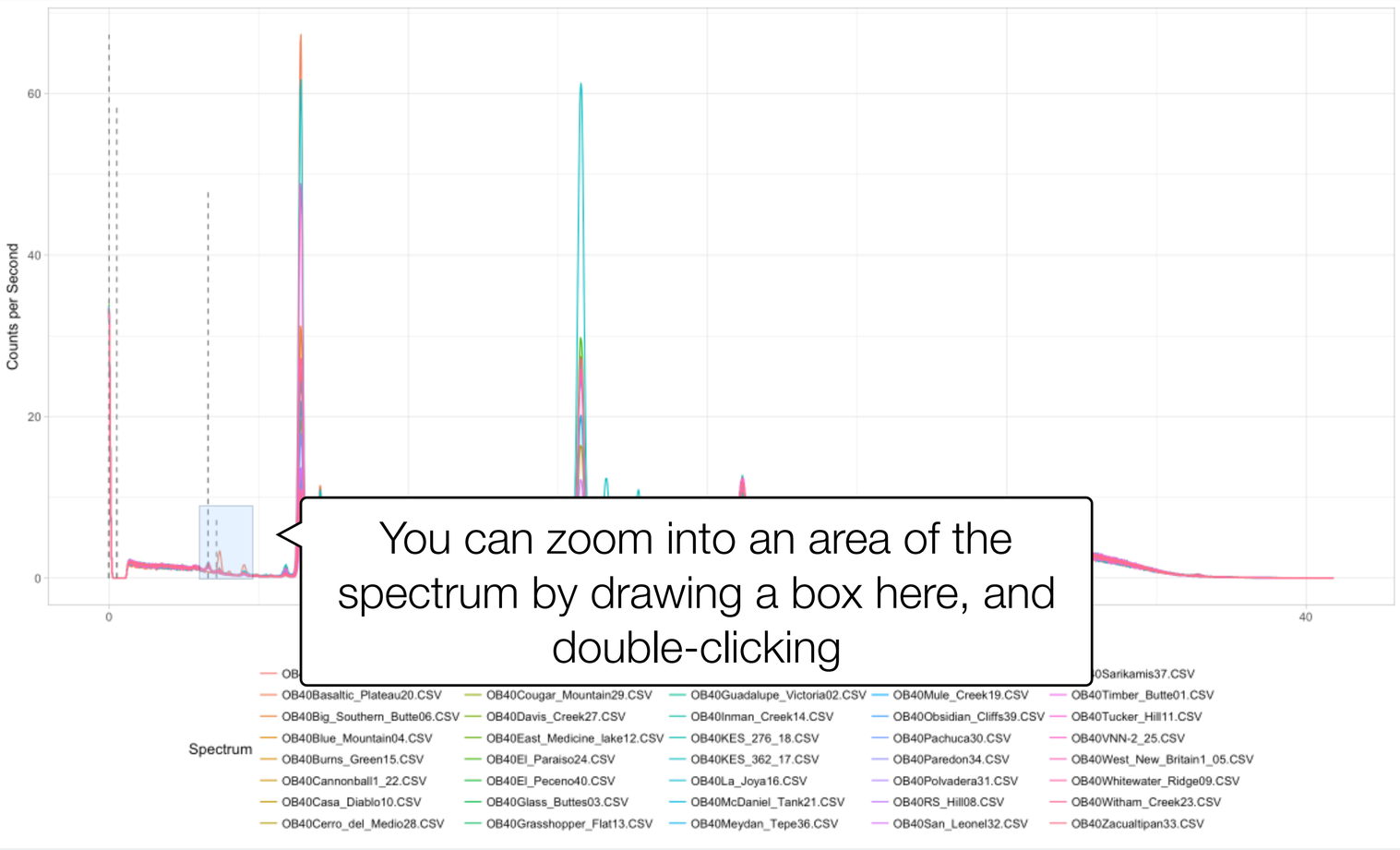
Element:

(K) Potassium

Load Cal File

Browse... No file selected

☐ Use Cal File



You can zoom into an area of the spectrum by drawing a box here, and double-clicking

CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

X-Ray Fluorescence Calibration

Calibration Name

Obsidian

Process Data | Plot Spectrum | Plot

Choose Spectra

Browse... 40 files

Upload complete

- (•) Spectra
- ( ) Net

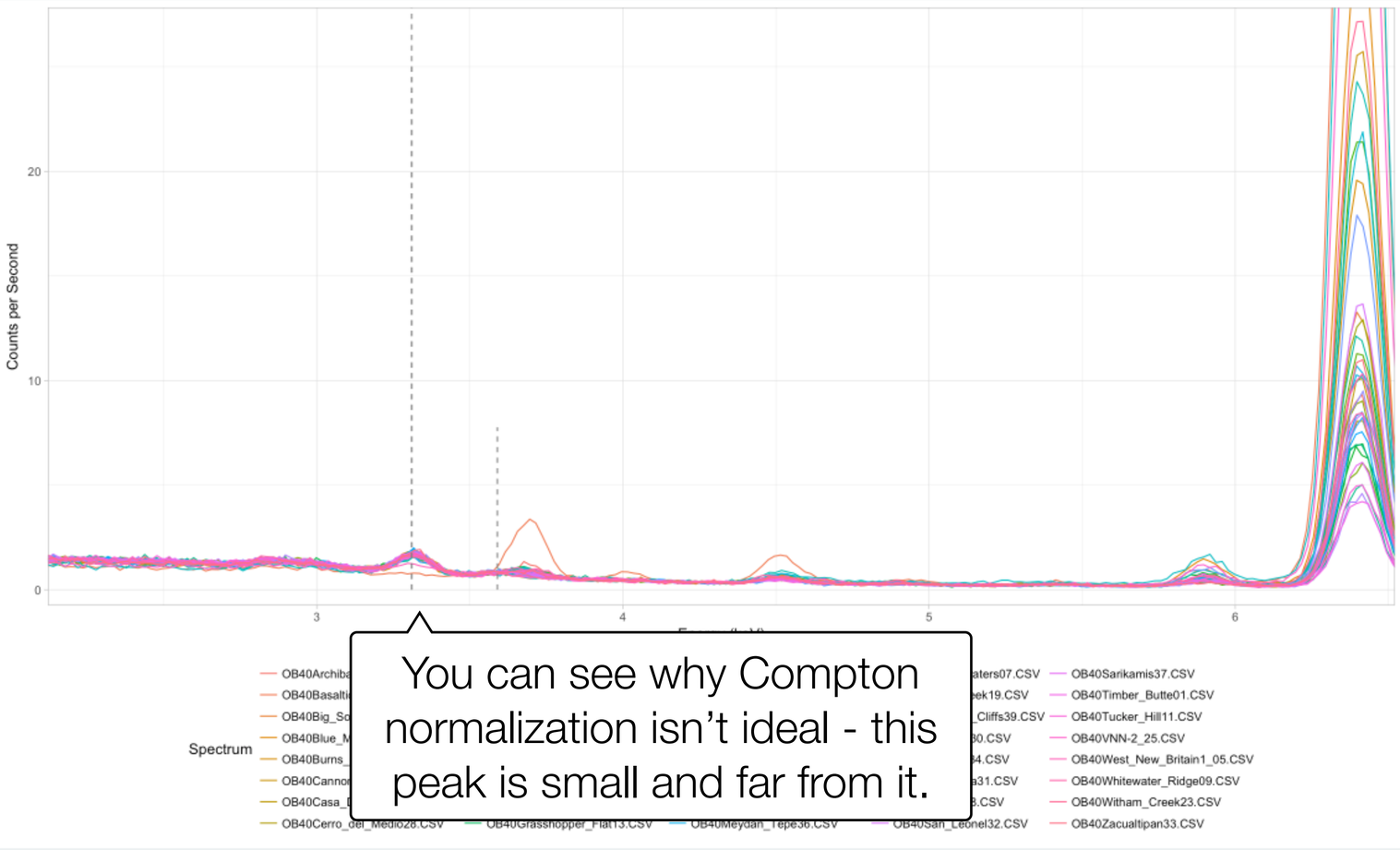
Element:

(K) Potassium

Load Cal File

Browse... No file selected

☐ Use Cal File



You can see why Compton normalization isn't ideal - this peak is small and far from it.

CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Plot | Update | Save

Element

K.K.alpha

Calibration Curve

- Linear
- Non-Linear
- Lucas-Tooth

Normalization

- Time
- Total Counts
- Compton

Min

3

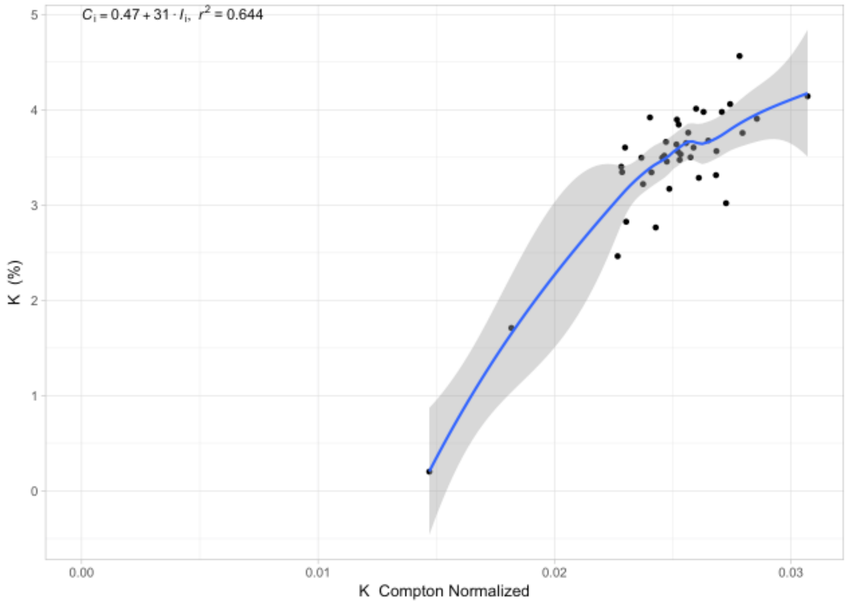
Max

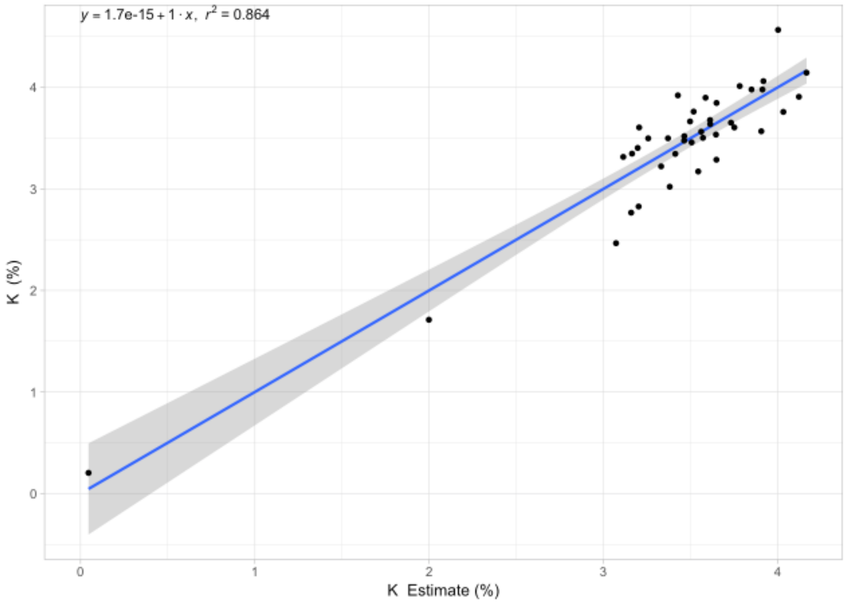
3.2

Intercept

- [x] K.K.alpha
- [ ] Ca.K.alpha
- [ ] Ti.K.alpha
- [ ] Mn.K.alpha
- [ ] Fe.K.alpha
- [ ] Co.K.alpha
- [ ] Cu.K.alpha
- [ ] Zn.K.alpha
- [ ] Ga.K.alpha

View Curves | Diagnostics | Standards





Here, when the normalization is changed to something closer to the peak, the model improves

CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

To check the quality of the cal, we can evaluate a variety of diagnostic plots

Plot | Update | Sa

Element

K.K.alpha

Calibration Curve

- Linear
- Non-Linear
- Lucas-Tooth

Normalization

- Time
- Total Counts
- Compton

Min

3

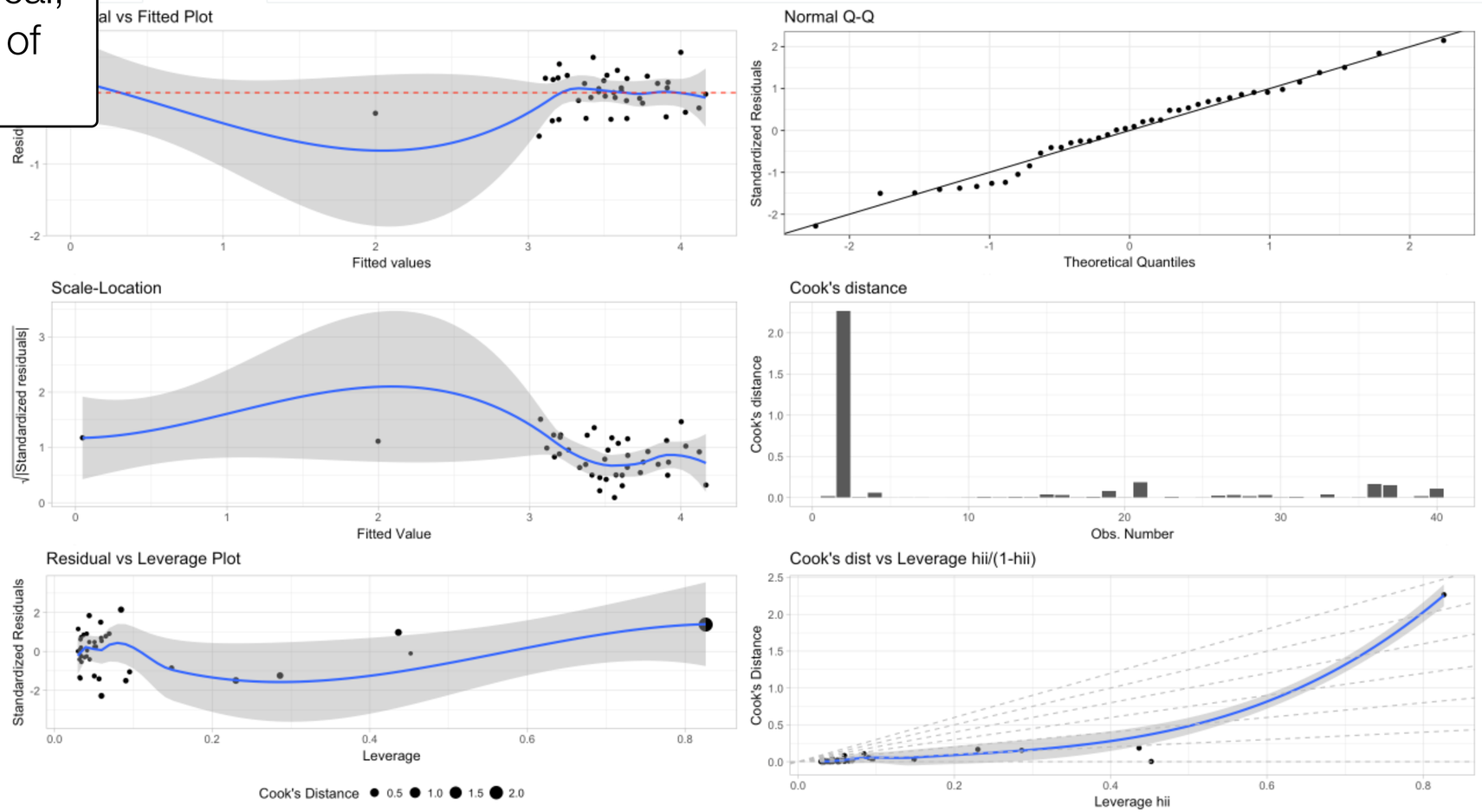
Max

3.2

Intercept

- K.K.alpha
- Ca.K.alpha
- Ti.K.alpha
- Mn.K.alpha
- Fe.K.alpha
- Co.K.alpha
- Cu.K.alpha
- Zn.K.alpha
- Ga.K.alpha

Diagnostics | Standards



CloudCal

127.0.0.1:3315

Lee

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

We can also evaluate the product data of the calibration in absolute and relative terms

Plot | Update | Save

Element

K.K.alpha

Calibration Curve

- Linear
- Non-Linear
- Lucas-Tooth

Normalization

- Time
- Total Counts
- Compton

Min

3

Max

3.2

Intercept

- [x] K.K.alpha
- [ ] Ca.K.alpha
- [ ] Ti.K.alpha
- [ ] Mn.K.alpha
- [ ] Fe.K.alpha
- [ ] Co.K.alpha
- [ ] Cu.K.alpha
- [ ] Zn.K.alpha
- [ ] Ga.K.alpha

ics | Standards

Search:

		Concentration	Prediction	Difference	Relative
	5.CSV	3.1712	3.543092800145	-0.371892800145003	-0.117271947573475
2	OB40Basaltic_Plateau20.CSV	0.2036	0.0457670629668963	0.157832937033104	0.775210889160627
3	OB40Big_Southern_Butte06.CSV	4.0605	3.91723052438532	0.143269475614676	0.0352837028973466
4	OB40Blue_Mountain04.CSV	2.7656	3.15848555757976	-0.392885557579755	-0.142061598777754
5	OB40Burns_Green15.CSV	3.5022	3.57038916259993	-0.068189162599928	-0.0194703793615236
6	OB40Cannonball1_22.CSV	3.6776	3.61095241204926	0.0666475879507411	0.0181225766670495
7	OB40Casa_Diablo10.CSV	3.9778	3.91174367817721	0.0660563218227885	0.0166062451160914
8	OB40Cerro_del_Medio28.CSV	3.6373	3.61179432075415	0.0255056792458457	0.00701225613665237
9	OB40Chickahominy26.CSV	3.519	3.46324429496596	0.0557557050340427	0.0158441901205009
10	OB40Cougar_Mountain29.CSV	3.2214	3.33031419391722	-0.108914193917224	-0.0338095840060916

Showing 1 to 10 of 40 entries

Previous | 1 | 2 | 3 | 4 | Next

CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Plot | Update | Save

Element

Ca.K.alpha

Calibration Curve

Total Counts

Compton

Min

3

Max

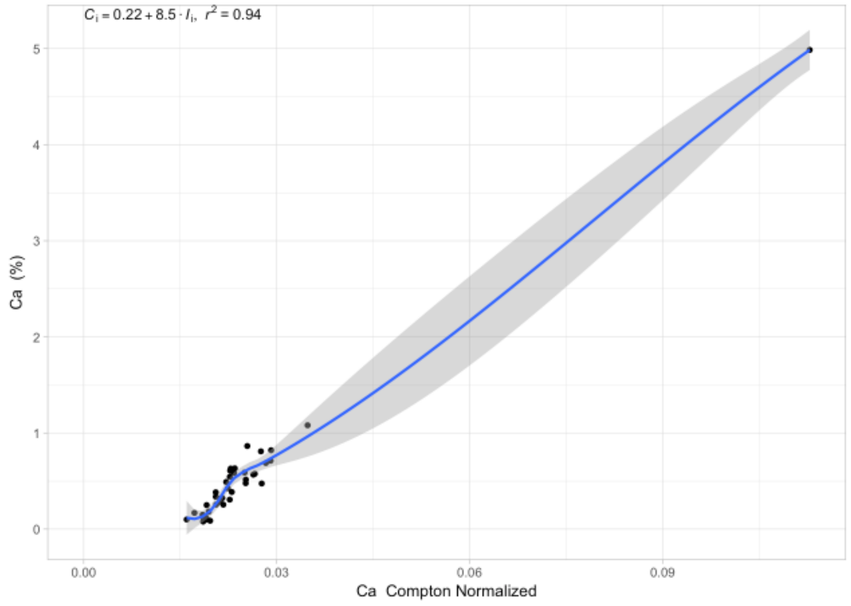
3.2

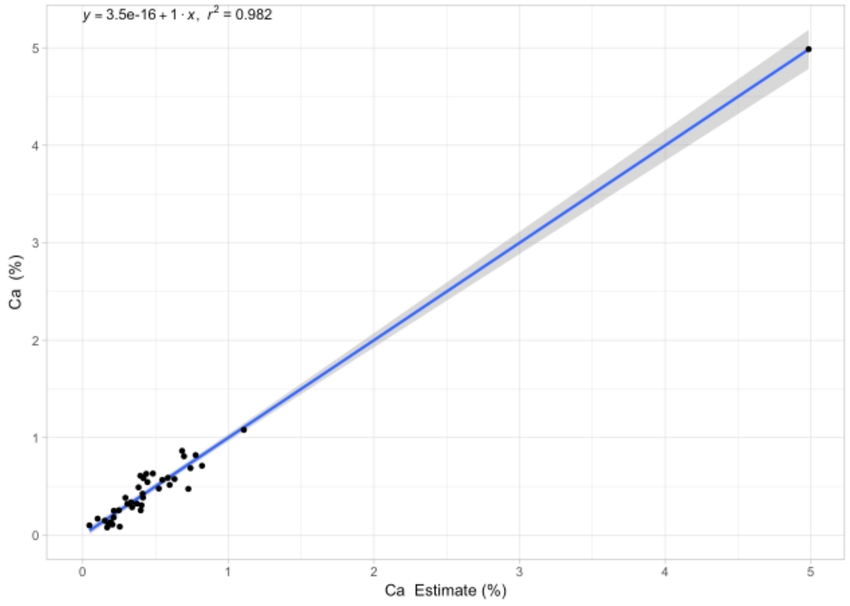
Intercept

- K.K.alpha
- Ca.K.alpha
- Ti.K.alpha
- Mn.K.alpha
- Fe.K.alpha
- Co.K.alpha
- Cu.K.alpha
- Zn.K.alpha
- Ga.K.alpha

To see why this is important, we can look at another element

View Curves | Diagnostics | Standards





One point has a concentration much higher than all the others, is this ok for the model?

CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Plot | Update | Save

Element

Ca.K.alpha

Calibration Curve

- Linear
- Non-Linear
- Lucas-Tooth

Normalization

- Time
- Total Counts
- Compton

Min

3

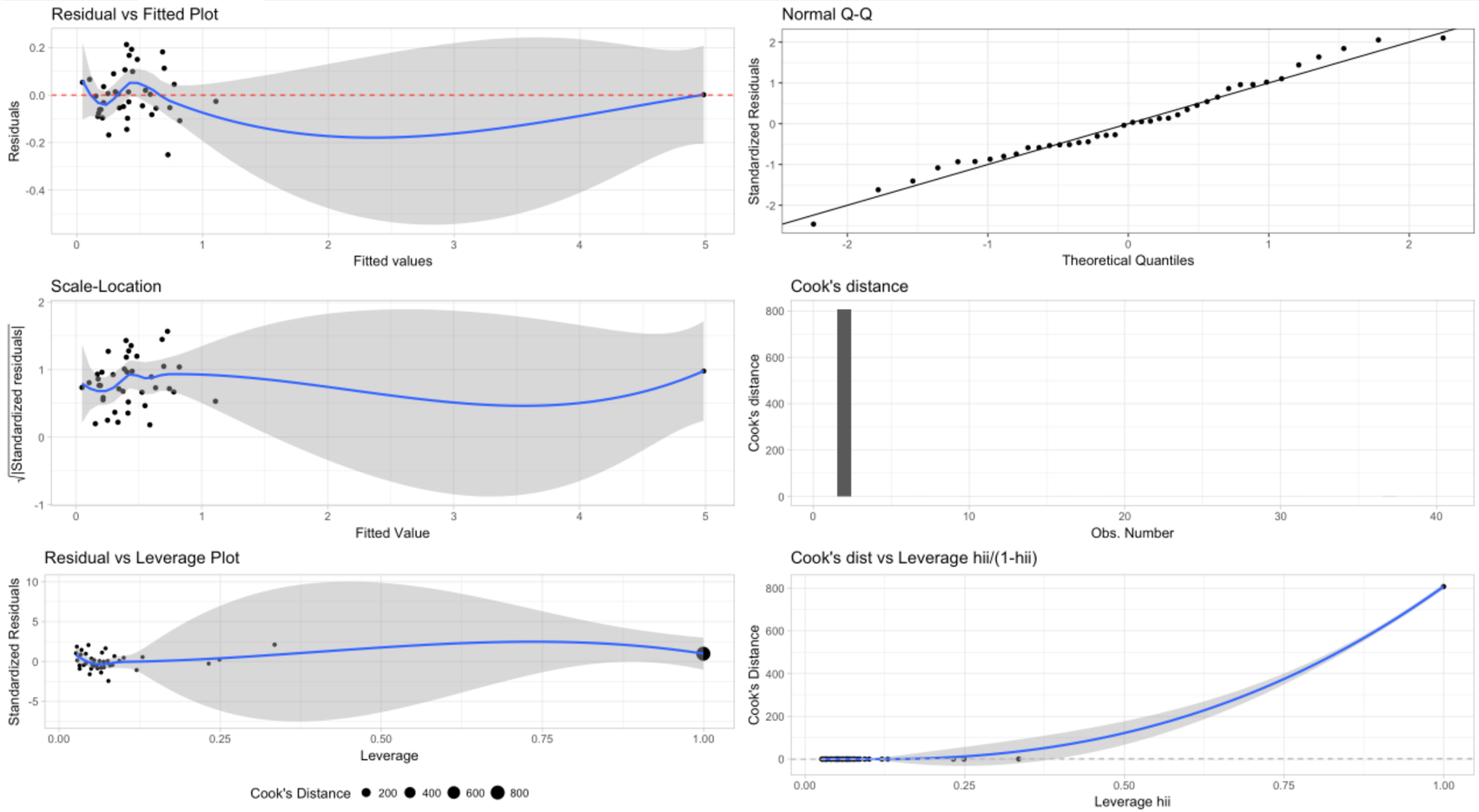
Max

3.2

Intercept

- K.K.alpha
- Ca.K.alpha
- Ti.K.alpha
- Mn.K.alpha
- Fe.K.alpha
- Co.K.alpha
- Cu.K.alpha
- Zn.K.alpha
- Ga.K.alpha

View Curves | Diagnostics | Standards



Diagnostic plots indicate that while the Q-Q is good, that point has a large Cook's Distance

CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Enter Values

If we return to ‘Add Concentrations’, we can put in ‘999’ in the cell with the high value to delete it. Then hit ‘Enter Values’

Enter Concentrations

	Spectrum	K.K.alpha	Ca.K.alpha	Ti.K.alpha	Mn.K.alpha	Fe.K.alpha	Co.K.alpha	Cu.K.alpha	Zn.K.alpha	Ga.K.alpha	As.K.alpha	Rb.K.alpha	Sr.K.alpha	Y.K
1	OB40Archibarca35.CSV	3.17	1.08	0.08	0.05	0.87	0.00	0.00	0.00	0.00	0.00	0.01	0.03	
2	OB40Basaltic_Plateau20.CSV	0.20	999	0.78	0.11	6.85	0.00	0.00	0.01	0.00	0.00	0.00	0.03	
3	OB40Big_Southern_Butte06.CSV	4.06	0.32	0.05	0.03	1.17	0.00	0.00	0.03	0.00	0.00	0.03	0.00	
4	OB40Blue_Mountain04.CSV	2.77	0.10	0.12	0.16	2.74	0.00	0.00	0.02	0.00	0.00	0.01	0.00	
5	OB40Burns_Green15.CSV	3.50	0.13	0.10	0.05	1.72	0.00	0.00	0.01	0.00	0.00	0.01	0.00	
6	OB40Cannonball1_22.CSV	3.68	0.18	0.10	0.05	2.33	0.00	0.00	0.02	0.00	0.00	0.03	0.00	
7	OB40Casa_Diablo10.CSV	3.98	0.61	0.11	0.03	0.93	0.00	0.00	0.00	0.00	0.00	0.01	0.01	
8	OB40Cerro_del_Medio28.CSV	3.64	0.25	0.05	0.04	0.71	0.00	0.00	0.01	0.00	0.00	0.02	0.00	
9	OB40Chickahominy26.CSV	3.52	0.42	0.11	0.04	1.18	0.00	0.00	0.01	0.00	0.00	0.01	0.00	
10	OB40Cougar_Mountain29.CSV	3.22	0.47	0.03	0.03	0.81	0.00	0.00	0.01	0.00	0.00	0.01	0.00	
11	OB40Davis_Creek27.CSV	4.01	0.58	0.05	0.04	0.53	0.00	0.00	0.00	0.00	0.00	0.01	0.01	
12	OB40East_Medicine_lake12.CSV	3.66	0.63	0.14	0.03	1.04	0.00	0.00	0.00	0.00	0.00	0.01	0.01	
13	OB40El_Paraiso24.CSV	3.76	0.11	0.08	0.02	1.94	0.00	0.00	0.02	0.00	0.00	0.02	0.00	
14	OB40El_Peceno40.CSV	3.85	0.81	0.05	0.09	0.61	0.00	0.00	0.01	0.00	0.00	0.02	0.03	
15	OB40Glass_Buttes03.CSV	3.60	0.52	0.06	0.03	0.62	0.00	0.00	0.00	0.00	0.00	0.01	0.01	
16	OB40Grasshopper_Flat13.CSV	3.76	0.58	0.13	0.03	0.92	0.00	0.00	0.00	0.00	0.00	0.01	0.01	
17	OB40Gregory_Creek38.CSV	3.60	0.82	0.02	0.07	0.65	0.00	0.00	0.00	0.00	0.00	0.01	0.01	
18	OB40Guadalupe_Victoria02.CSV	3.40	0.34	0.06	0.05	0.43	0.00	0.00	0.00	0.00	0.00	0.01	0.01	
19	OB40Inman_Creek14.CSV	2.46	0.71	0.05	0.05	1.08	0.00	0.00	0.01	0.00	0.00	0.01	0.01	
20	OB40KES_276_18.CSV	4.14	0.57	0.31	0.11	2.34	0.00	0.00	0.01	0.00	0.00	0.02	0.01	
21	OB40KES_362_17.CSV	3.31	0.15	0.16	0.18	5.37	0.00	0.00	0.06	0.00	0.00	0.04	0.00	
22	OB40La_Joya16.CSV	3.48	0.12	0.09	0.06	1.89	0.00	0.00	0.01	0.00	0.00	0.02	0.00	
23	OB40McDaniel_Tank21.CSV	3.90	0.69	0.16	0.06	1.00	0.00	0.00	0.01	0.00	0.00	0.02	0.02	
24	OB40Meydan_Tepe36.CSV	3.46	0.29	0.05	0.05	0.93	0.00	0.00	0.01	0.00	0.00	0.02	0.00	
25	OB40Mono_Craters07.CSV	3.53	0.38	0.04	0.04	0.78	0.00	0.00	0.00	0.00	0.00	0.02	0.00	
26	OB40Mule_Creek19.CSV	3.57	0.39	0.04	0.04	0.66	0.00	0.00	0.00	0.00	0.00	0.02	0.00	
27	OB40Obsidian_Cliffs39.CSV	2.83	0.59	0.06	0.03	0.73	0.00	0.00	0.00	0.00	0.00	0.01	0.01	
28	OB40Pachuca30.CSV	3.29	0.08	0.11	0.11	1.63	0.00	0.00	0.02	0.00	0.00	0.02	0.00	
29	OB40Paredon34.CSV	3.91	0.26	0.08	0.04	0.85	0.00	0.00	0.01	0.00	0.00	0.02	0.00	
30	OB40Polvadera31.CSV	3.98	0.31	0.04	0.04	0.38	0.00	0.00	0.00	0.00	0.00	0.01	0.00	
31	OB40RS_Hill08.CSV	3.35	0.25	0.02	0.04	0.72	0.00	0.00	0.01	0.00	0.00	0.04	0.00	
32	OB40San_Leonel32.CSV	3.56	0.17	0.06	0.03	1.24	0.00	0.00	0.01	0.00	0.00	0.01	0.00	
33	OB40Sarikamis37.CSV	3.92	0.32	0.05	0.04	0.55	0.00	0.00	0.00	0.00	0.00	0.01	0.00	
34	OB40Timber_Butte01.CSV	3.65	0.49	0.03	0.08	0.37	0.00	0.00	0.01	0.00	0.00	0.02	0.00	
35	OB40Tucker_Hill11.CSV	3.50	0.54	0.03	0.05	0.47	0.00	0.00	0.00	0.00	0.00	0.01	0.00	
36	OB40VNN-2_25.CSV	3.02	0.10	0.07	0.12	4.38	0.00	0.00	0.03	0.00	0.00	0.02	0.00	
37	OB40West_New_Britain1_05.CSV	1.71	0.86	0.11	0.06	0.86	0.00	0.00	0.01	0.00	0.00	0.00	0.02	

CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Plot | Update | Save

Element

Ca.K.alpha

Calibration Curve

- Linear
- Non-Linear
- Lucas-Tooth

Normalization

- Time
- Total Counts
- Compton

Min

3

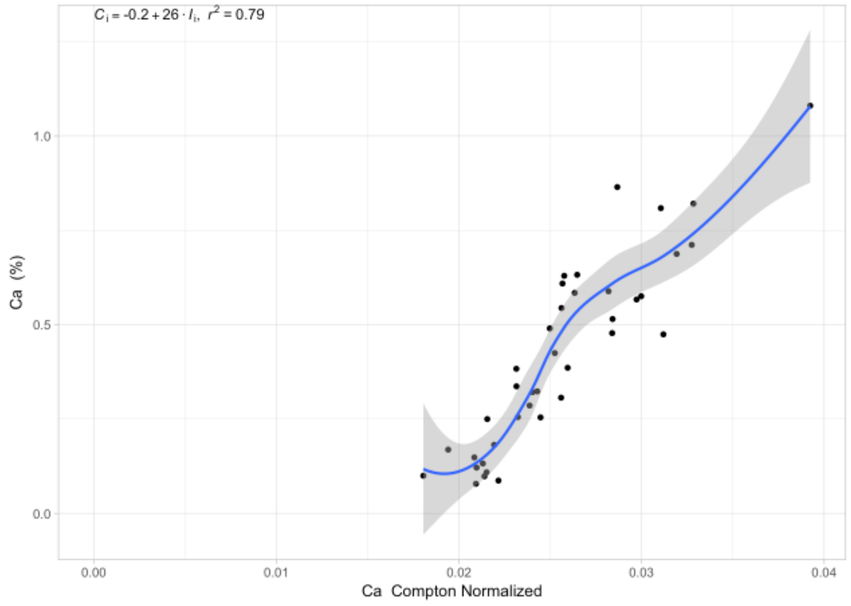
Max

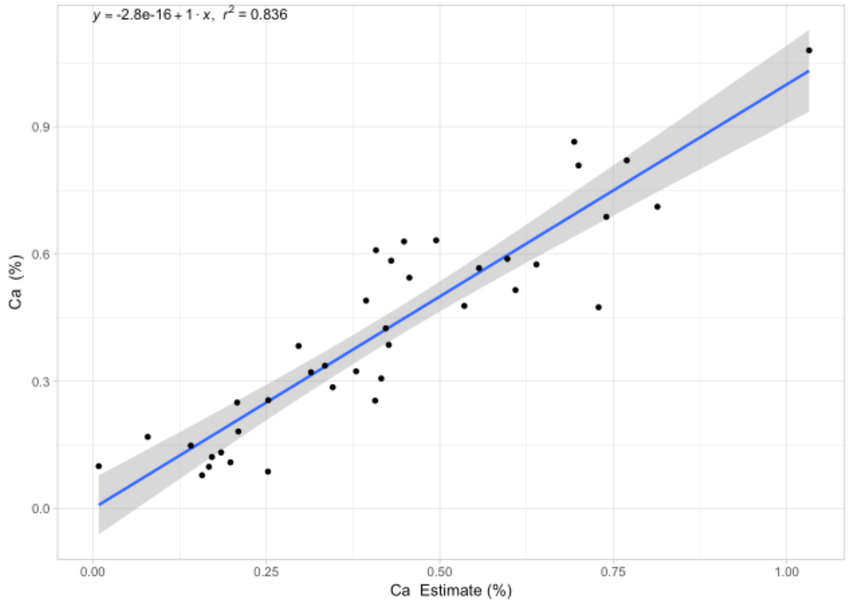
3.2

Intercept

- K.K.alpha
- Ca.K.alpha
- Ti.K.alpha
- Mn.K.alpha
- Fe.K.alpha
- Co.K.alpha
- Cu.K.alpha
- Zn.K.alpha
- Ga.K.alpha

View Curves | Diagnostics | Standards





Click ‘Plot’ in the ‘Cal Curves’ window, and you can now see the plot without the data point

CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Plot | Update | Save

Element

Ca.K.alpha

Calibration Curve

- Linear
- Non-Linear
- Lucas-Tooth

Normalization

- Time
- Total Counts
- Compton

Min

3

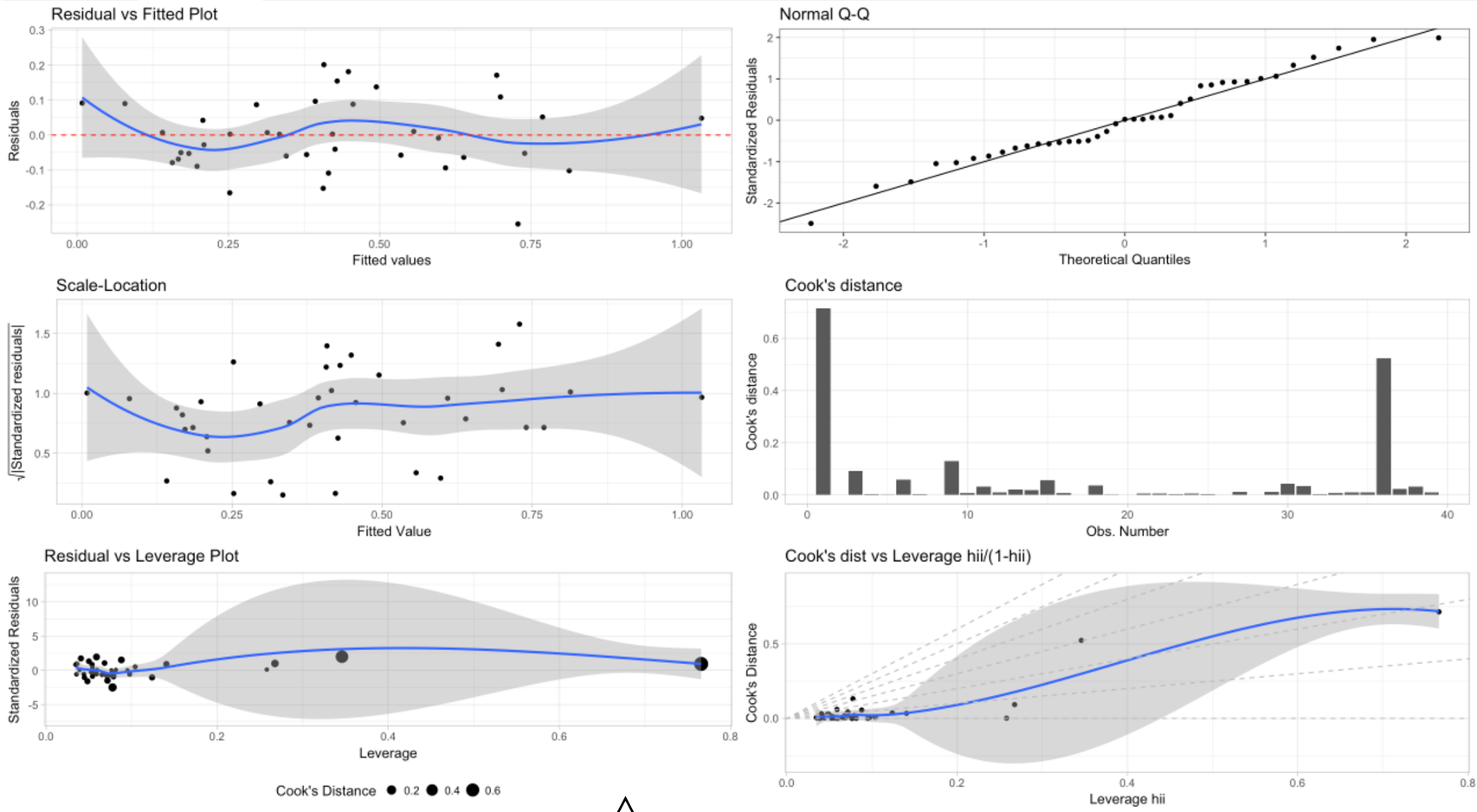
Max

3.2

Intercept

- K.K.alpha
- Ca.K.alpha
- Ti.K.alpha
- Mn.K.alpha
- Fe.K.alpha
- Co.K.alpha
- Cu.K.alpha
- Zn.K.alpha
- Ga.K.alpha

View Curves | Diagnostics | Standards



Here, we see that there is a more even spread of data, creating a calibration less leveraged on one value

CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Plot | Update | Save

When you are done with all elements, you can click ‘Save’ to commit all elements to the calibration file

Element

U.L.alpha

Calibration Curve

- Linear
- Non-Linear
- Lucas-Tooth

Normalization

- Time
- Total Counts
- Compton

Min

19.5

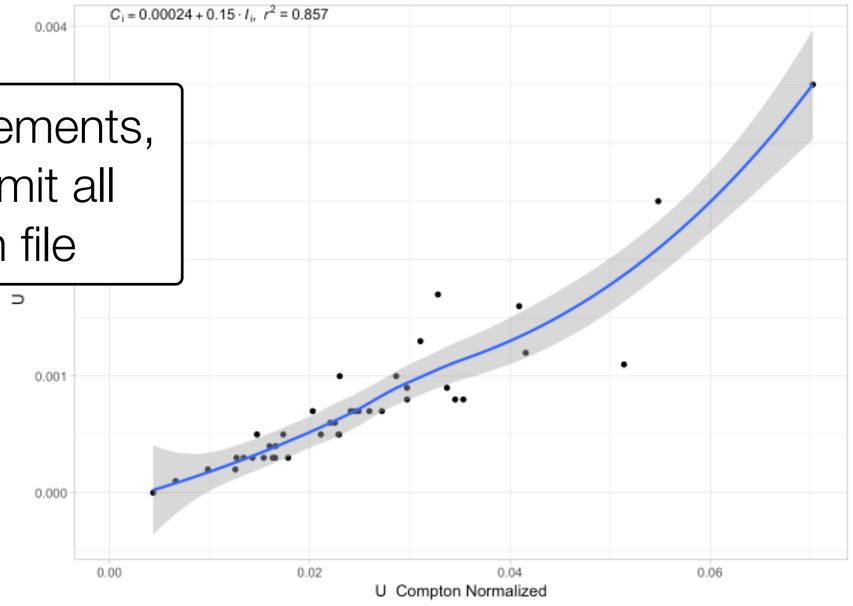
Max

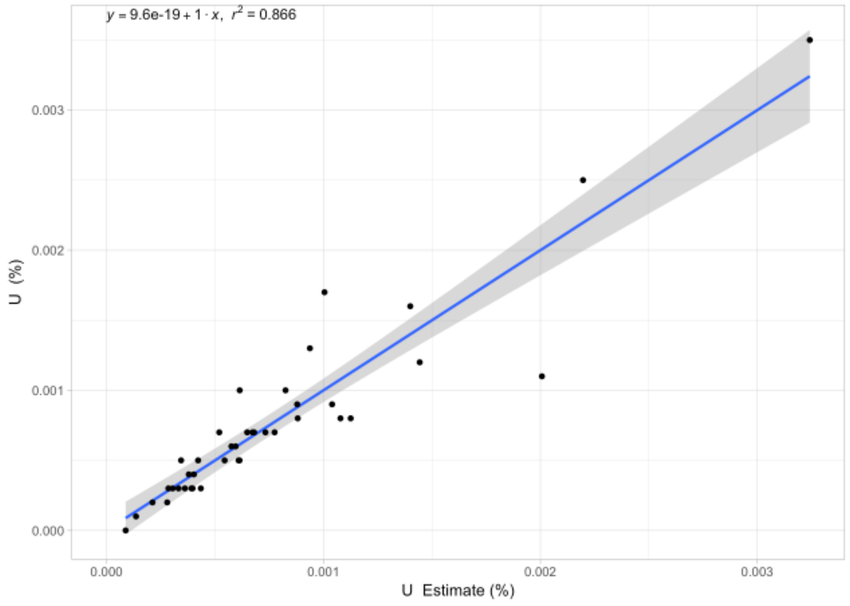
22

Intercept

- K.K.alpha
- Ca.K.alpha
- Ti.K.alpha
- Mn.K.alpha
- Fe.K.alpha
- Co.K.alpha
- Cu.K.alpha
- Zn.K.alpha
- Ga.K.alpha

View Curves | Diagnostics | Standards





CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

X-Ray Fluorescence Calibration

Calibration Name

ObsidianT3S1716

Process Data | Plot Spectrum | Plot

Choose Spectra

Browse... 40 files

Upload complete

- (•) Spectra
- ( ) Net

Element:

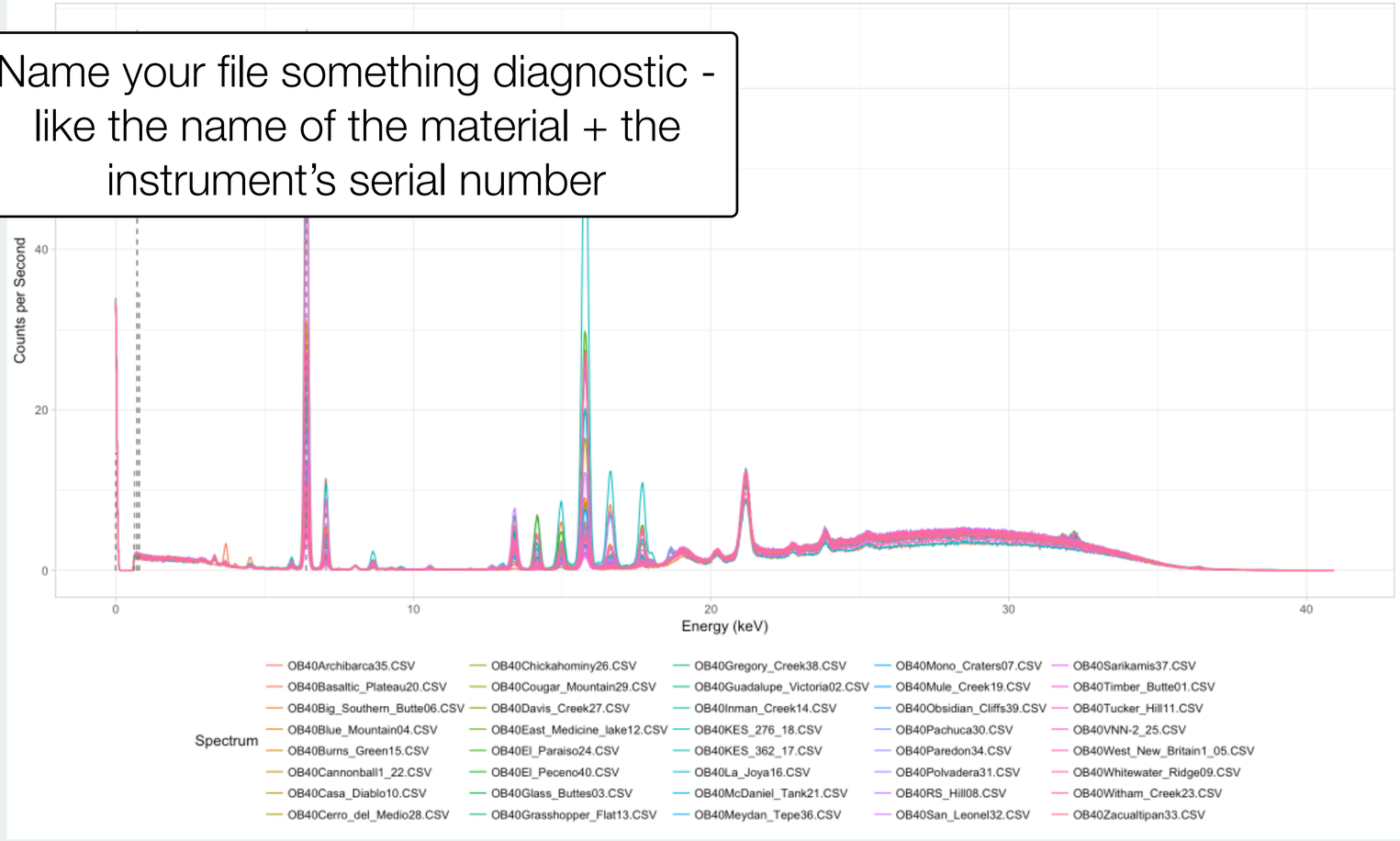
(Fe) Iron

Load Cal File

Browse... No file selected

☐ Use Cal File

Name your file something diagnostic - like the name of the material + the instrument's serial number



CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Plot | Update | Save

Once you are ready, you can download the calibration file

Element

U.L.alpha

Calibration Curve

- Linear
- Non-Linear
- Lucas-Tooth

Normalization

- Time
- Total Counts
- Compton

Min

19.5

Max

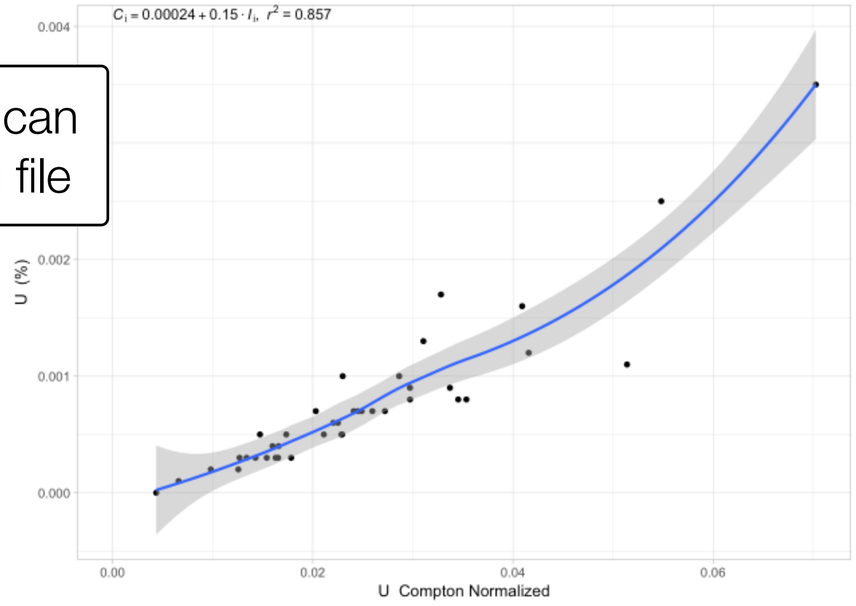
22

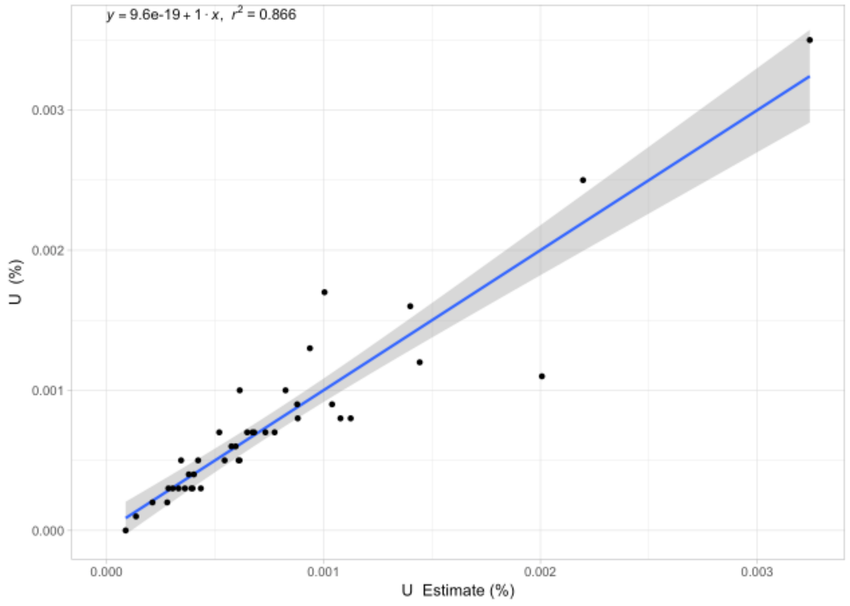
Intercept

- K.K.alpha
- Ca.K.alpha
- Ti.K.alpha
- Mn.K.alpha
- Fe.K.alpha
- Co.K.alpha
- Cu.K.alpha
- Zn.K.alpha

The calibration will be saved with the name you gave it as a .quant file

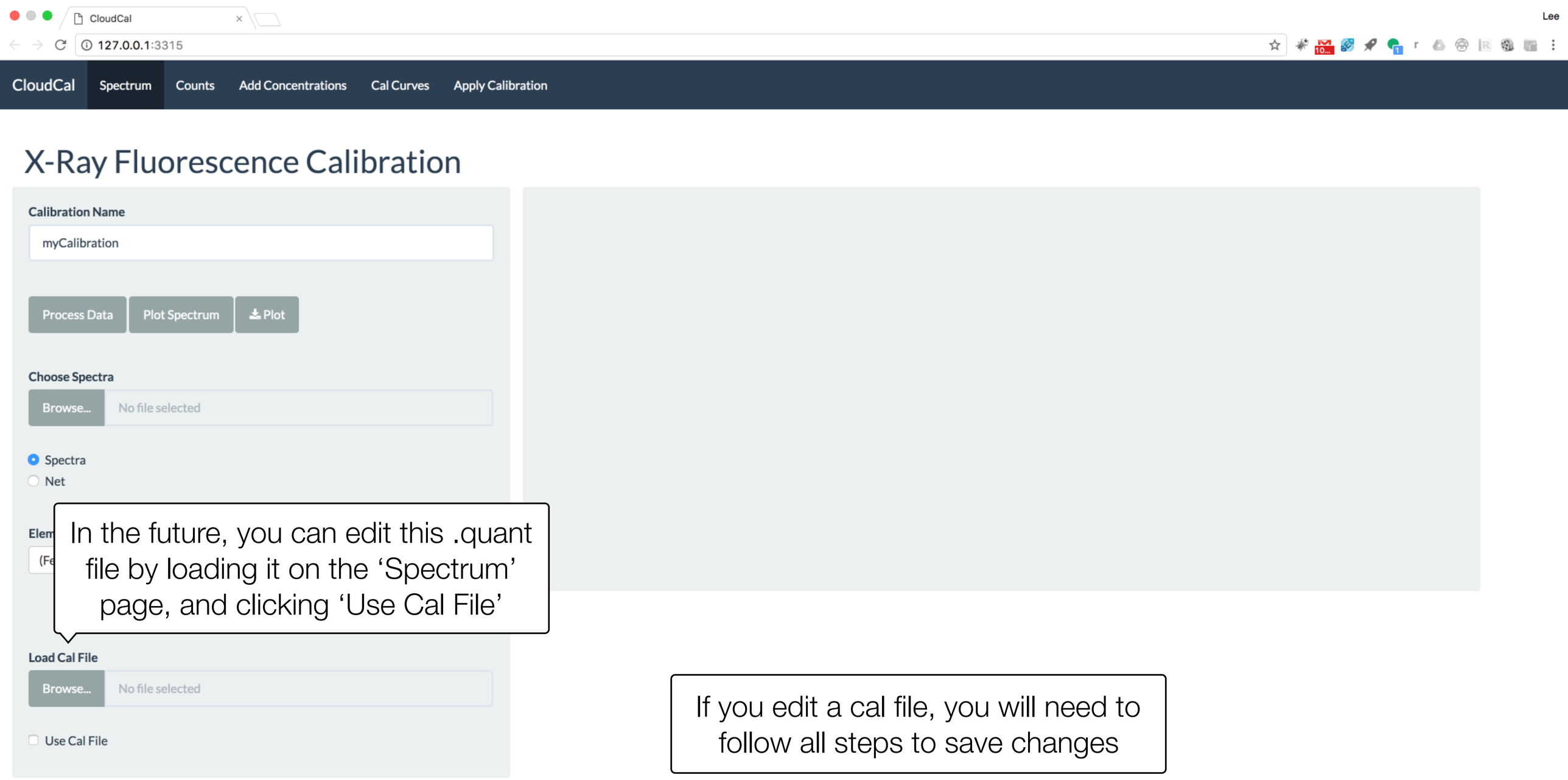
View Curves | Diagnostics | Standards





ObsidianT3S1716.quant

Show All



In the future, you can edit this .quant file by loading it on the 'Spectrum' page, and clicking 'Use Cal File'

If you edit a cal file, you will need to follow all steps to save changes

CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

You can test the cal, or apply it to large data sets, on ‘Apply Calibration’

Quantify

Choose Spectra

Browse... No file selected

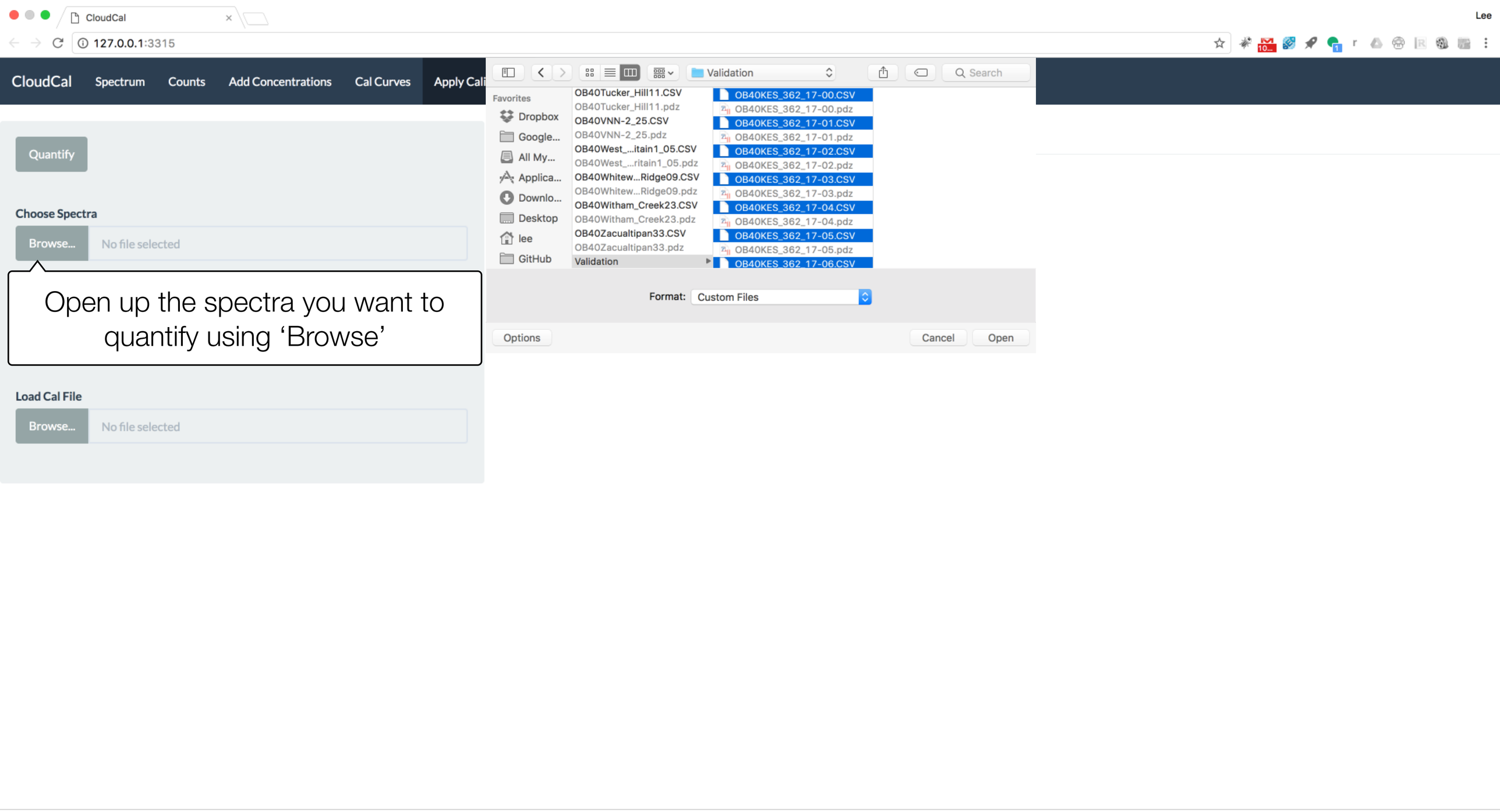
Results

Load Cal File

Browse... No file selected

ObsidianT3S1716.quant

Show All


CloudCal
127.0.0.1:3315
Lee
CloudCal
Spectrum
Counts
Add Concentrations
Cal Curves
Apply Cali
Quantify
Choose Spectra
Browse...
No file selected
Open up the spectra you want to quantify using 'Browse'
Load Cal File
Browse...
No file selected
Validation
Search
Favorites
Dropbox
Google...
All My...
Applica...
Downlo...
Desktop
lee
GitHub
OB40Tucker_Hill11.CSV
OB40Tucker_Hill11.pdz
OB40VNN-2_25.CSV
OB40VNN-2_25.pdz
OB40West_...itain1_05.CSV
OB40West_...ritain1_05.pdz
OB40Whitew...Ridge09.CSV
OB40Whitew...Ridge09.pdz
OB40Witham_Creek23.CSV
OB40Witham_Creek23.pdz
OB40Zacualtipan33.CSV
OB40Zacualtipan33.pdz
Validation
OB40KES_362_17-00.CSV
OB40KES_362_17-00.pdz
OB40KES_362_17-01.CSV
OB40KES_362_17-01.pdz
OB40KES_362_17-02.CSV
OB40KES_362_17-02.pdz
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OB40KES_362_17-04.pdz
OB40KES_362_17-05.CSV
OB40KES_362_17-05.pdz
OB40KES_362_17-06.CSV
Format:
Custom Files
Options
Cancel
Open
ObsidianT3S1716.quant
Show All

CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Quantify

Choose Spectra

Browse... 30 files

Upload complete

Results

The status of the upload will be indicated here

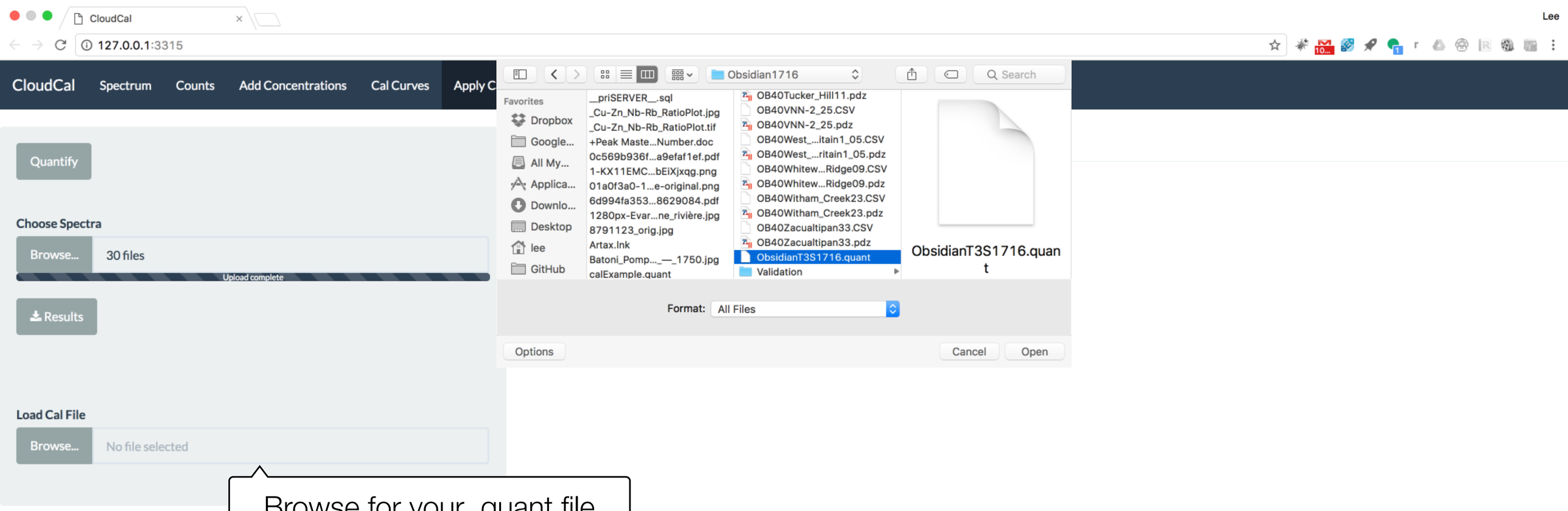
Load Cal File

Browse... No file selected

Validation | Counts

ObsidianT3S1716.quant

Show All



Browse for your .quant file here - you will need to have an existing file

CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Quantify

When everything is ready, click 'Quantify'

Validation | Counts

Choose Spectra

Browse... 30 files

Upload complete

Results

Load Cal File

Browse... ObsidianT3S1716.quant

Upload complete

ObsidianT3S1716.quant

Show All

CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Quantify

Choose Spectra

Browse... 30 files

Upload complete

Results

Load Cal File

Browse... ObsidianT3S1716.quant

Upload complete

Validation | Counts

Show 10 entries

Search:

	Spectrum	As.K.alpha	Ba.K.alpha	Ca.K.alpha	Co.K.alpha	Cu.K.alpha	Fe.K.alpha
1	OB40KES_362_17-00.CSV	0.000463815295623188	-0.064370668587769	0.306205801868475	0.00237023275057566	0.00131966273556775	5.7924834480857
2	OB40KES_362_17-01.CSV	0.000322096800981703	-0.0610441906197434	0.317104466145157	0.00300956958636639	0.000139274358499416	6.23039281488607
3	OB40KES_362_17-02.CSV	0.000315432693311329	-0.0610002951449382	-0.135324989048458	0.00187021927541898	0.000178072071125506	5.70154025119591
4	OB40KES_362_17-03.CSV	-0.000113820147964187	0.00685861778769903	0.371006235386069	0.00333625432297064	0.000322612915564326	5.64466483574534
5	OB40KES_362_17-04.CSV	0.000686491088709026	-0.0793083119274642	0.858100270567482	0.00346760366923405	0.000871850939981579	6.06797227540175
6	OB40KES_362_17-05.CSV	0.00036797545848524	-0.0649268528143068	0.313844891759042	0.00199153754250897	0.000407589231228397	6.14956098518842
7	OB40KES_362_17-06.CSV	0.000527937188744937	-0.0844006731489197	0.366748434920399	0.00278301669649239	0.000362639048515526	5.71349639773715
8	OB40KES_362_17-07.CSV	-0.000186530532410853	-0.0386374268963758	-0.108502135352386	-0.00051692485675101	0.00184082559843627	5.05393602605671
9	OB40KES_362_17-08.CSV	0.0000362648935217126	-0.0495280682863057	0.11805452462534	0.00193892752507277	0.0002435240599248	5.65518595019268
10	OB40KES_362_17-09.CSV	0.000643491416236847	-0.0506811695464275	0.328223673872163	0.00141975060266103	0.0019063462070858	5.6506440639408

Showing 1 to 10 of 30 entries

Previous 1 2 3 Next

A table of values will appear. Note that some values may be negative - this indicates that the data fall outside the range of the calibration, or are below the detection limit

ObsidianT3S1716.quant

Show All

CloudCal

127.0.0.1:3315

CloudCal | Spectrum | Counts | Add Concentrations | Cal Curves | Apply Calibration

Quantify

Choose Spectra

Browse... 30 files

Upload complete

Results

Load Cal File

Browse... ObsidianT3S1716.quant

Upload complete

Validation | Counts

Show 10 entries

Search:

	Spectrum	As.K.alpha	Ba.K.alpha	Ca.K.alpha	Co.K.alpha	Cu.K.alpha	Fe.K.alpha	Ga.K.alp
1	OB40KES_362_17-00.CSV	0.232747050302078	6.92422474648682	0.16209169574609	0.511212271199207	0.195341274360673	21.9655028722586	0.112217327824
2	OB40KES_362_17-01.CSV	0.274309023570306	6.82447601064307	0.153779301092444	0.519524665852853	0.257684234263015	22.3063110530581	0.149623103765
3	OB40KES_362_17-02.CSV	0.224434655648432	6.95331812777458	0.108061130497393	0.498743679218739	0.228590852975255	22.1483755546388	0.108061130497
4	OB40KES_362_17-03.CSV	0.22027845832161	7.47699899095426	0.174560287726559	0.569399033774727	0.224434655648432	22.2231871065216	0.120529722477
5	OB40KES_362_17-04.CSV	0.224434655648432	6.67069670955063	0.228590852975255	0.536149455160144	0.228590852975255	21.8325045578003	0.120529722477
6	OB40KES_362_17-05.CSV	0.241059444955724	6.90344375985271	0.157935498419267	0.490431284565093	0.245215642282546	22.5972448659357	0.124685919804
7	OB40KES_362_17-06.CSV	0.253528036936192	6.69147769618474	0.178716485053381	0.561086639121081	0.224434655648432	23.0876761505008	0.128842117131
8	OB40KES_362_17-07.CSV	0.195341274360673	7.248408137979	0.124685919804685	0.403151140701814	0.174560287726559	21.7992549791857	0.157935498419
9	OB40KES_362_17-08.CSV	0.187028879707027	7.11540982352067	0.13299831445833	0.507056073872384	0.207809866341141	22.2689052771167	0.141310709111
10	OB40KES_362_17-09.CSV	0.228590852975255	7.00734869302328	0.166247893072913	0.490431284565093	0.199497471687495	22.5681514846479	0.13299831445

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Quantify

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	Spectrum	As.K.alpha	Ba.K.alpha	Ca.K.alpha	Co.K.alpha	Cu.K.alpha	Fe.K.alpha	Ga.K.alp
1	OB40KES_362_17-00.CSV	0.232747050302078	6.92422474648682	0.16209169574609	0.511212271199207	0.195341274360673	21.9655028722586	0.112217327824
2	OB40KES_362_17-01.CSV	0.274309023570306	6.82447601064307	0.153779301092444	0.519524665852853	0.257684234263015	22.3063110530581	0.149623103765
3	OB40KES_362_17-02.CSV	0.224434655648432	6.95331812777458	0.108061130497393	0.498743679218739	0.228590852975255	22.1483755546388	0.108061130497
4	OB40KES_362_17-03.CSV	0.22027845832161	7.47699899095426	0.174560287726559	0.569399033774727	0.224434655648432	22.2231871065216	0.120529722477
5	OB40KES_362_17-04.CSV	0.224434655648432	6.67069670955063	0.228590852975255	0.536149455160144	0.228590852975255	21.8325045578003	0.120529722477
6	OB40KES_362_17-05.CSV	0.241059444955724	6.90344375985271	0.157935498419267	0.490431284565093	0.245215642282546	22.5972448659357	0.124685919804
7	OB40KES_362_17-06.CSV	0.253528036936192	6.69147769618474	0.178716485053381	0.561086639121081	0.224434655648432	23.0876761505008	0.128842117131
8	OB40KES_362_17-07.CSV	0.195341274360673	7.248408137979	0.124685919804685	0.403151140701814	0.174560287726559	21.7992549791857	0.157935498419
9	OB40KES_362_17-08.CSV	0.187028879707027	7.11540982352067	0.13299831445833	0.507056073872384	0.207809866341141	22.2689052771167	0.141310709111
10	OB40KES_362_17-09.CSV	0.228590852975255	7.00734869302328	0.166247893072913	0.490431284565093	0.199497471687495	22.5681514846479	0.13299831445

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