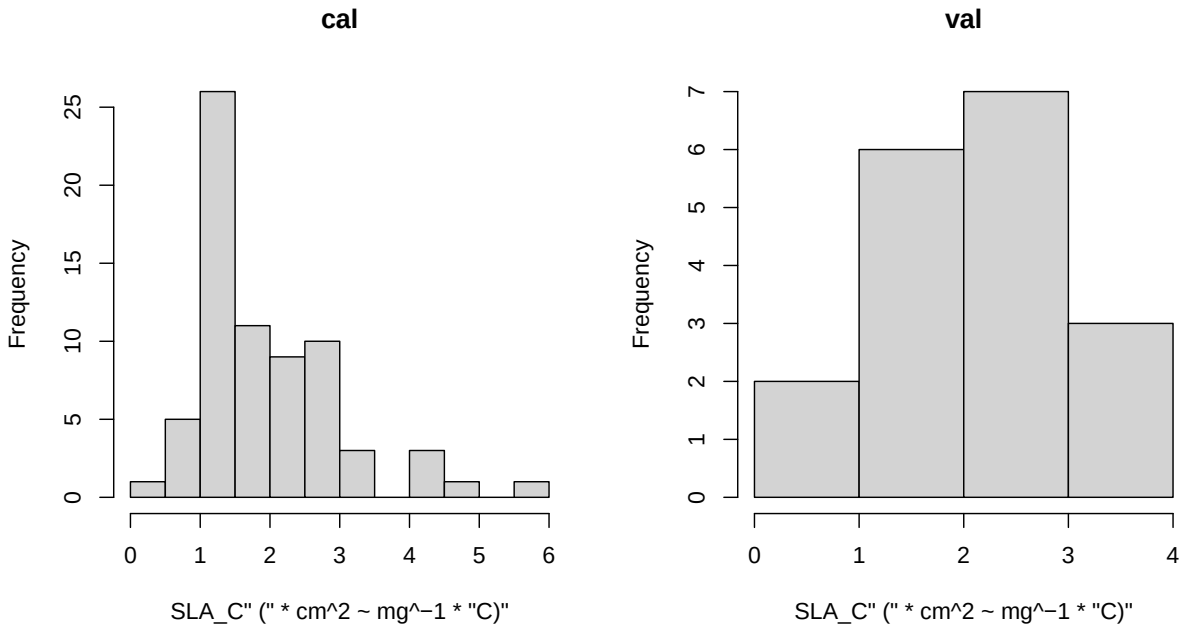
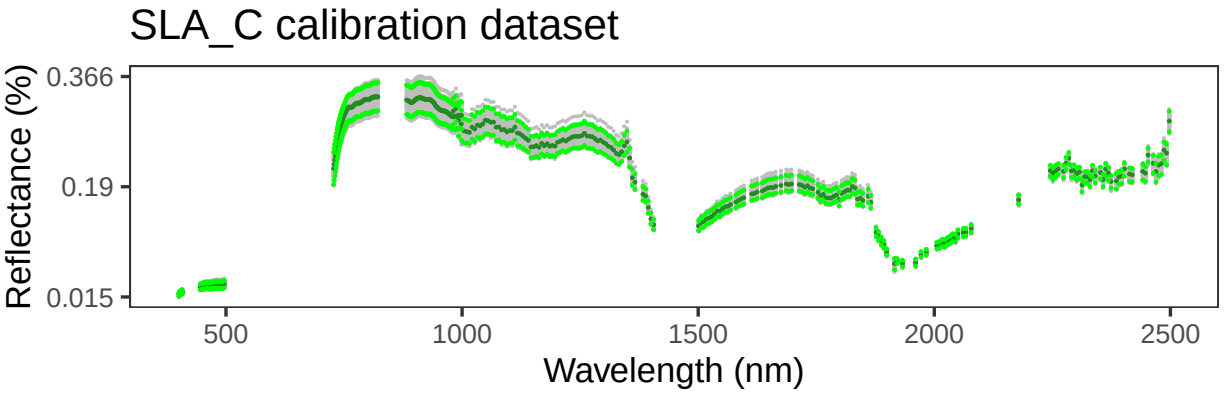
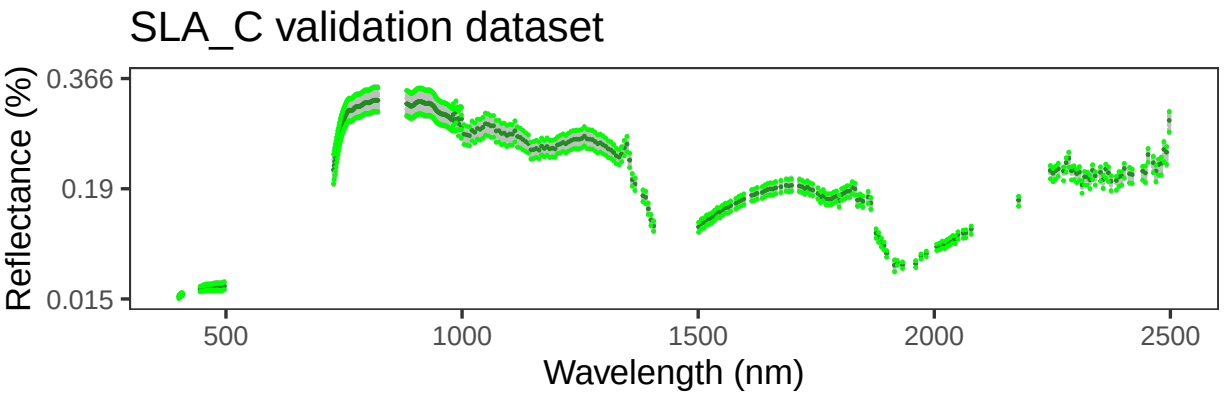
Use side-view HSI data to predict SLA_C

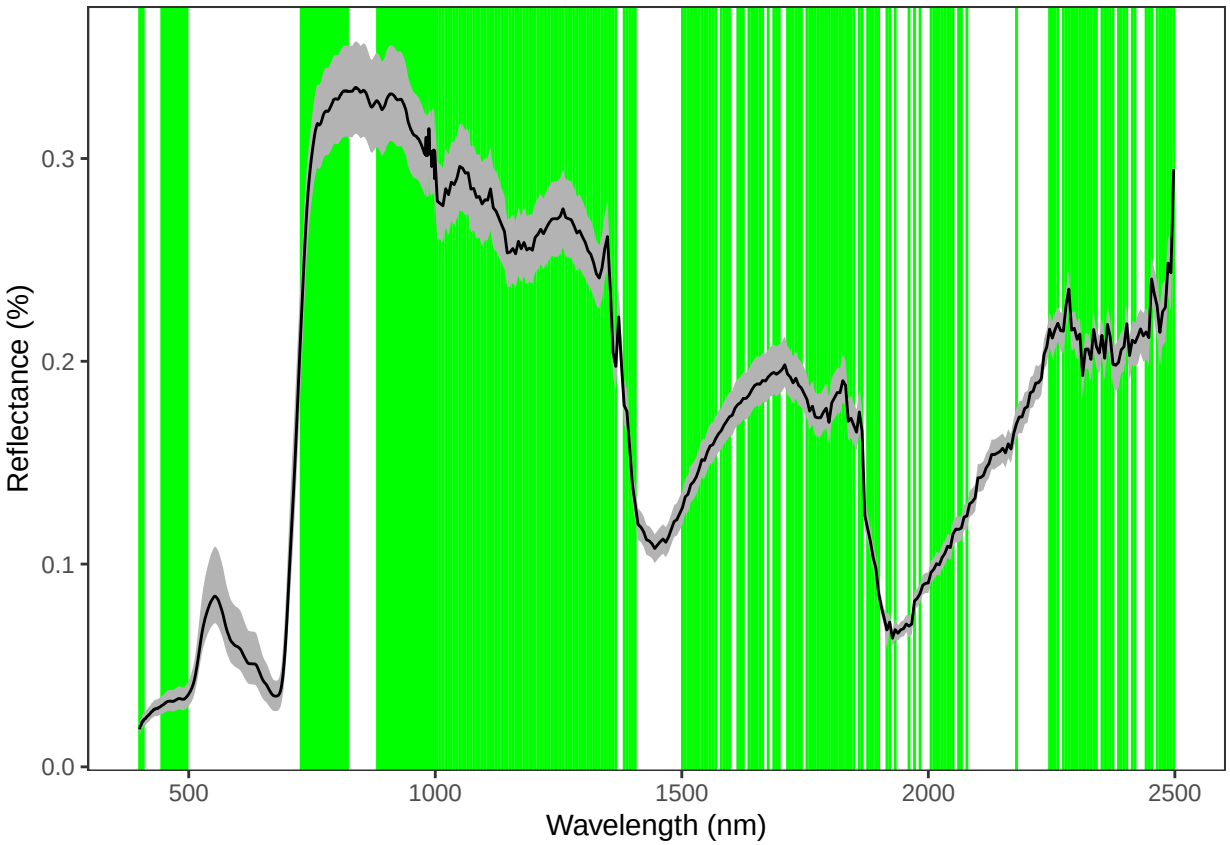
2023-08-08

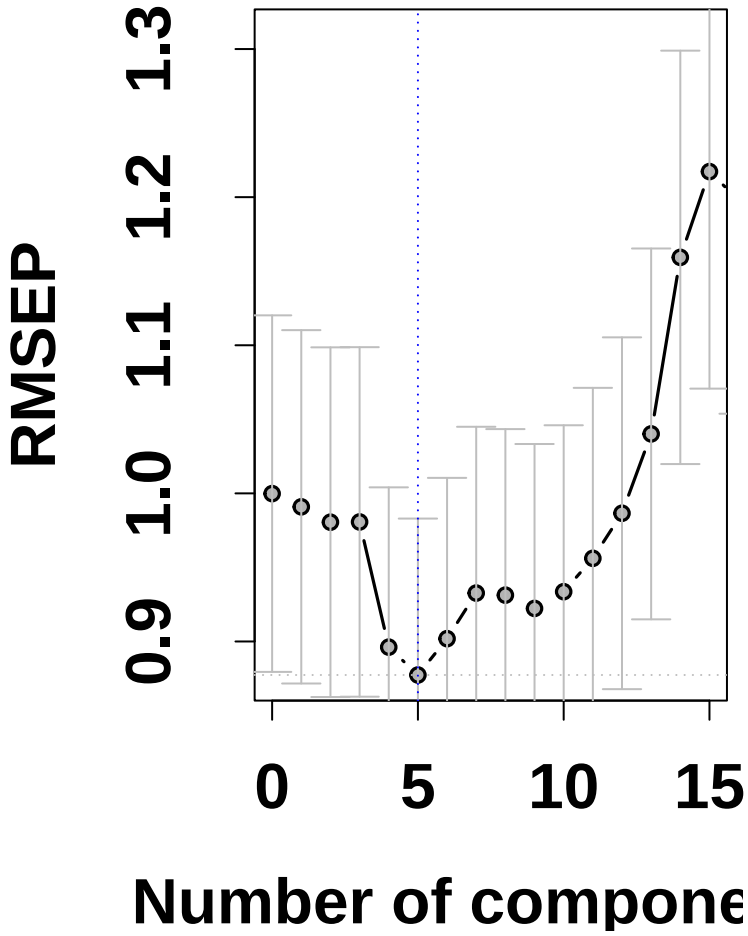
```
## $plsralg
## [1] "oscorespls"

##  [1] "916" "946" "908" "929" "941" "917" "948" "912" "926" "919" "931" "910"
## [13] "940" "943" "933" "907" "942" "928" "936" "922" "909" "920" "911" "927"
## [25] "915" "921" "906" "944" "947" "945" "905" "914" "925" "903" "904" "971"
## [37] "952" "990" "975" "951" "981" "993" "978" "983" "984" "955" "959" "995"
## [49] "967" "970" "987" "956" "965" "973" "960" "972" "963" "958" "979" "969"
## [61] "996" "989" "950" "992" "991" "980" "985" "954" "977" "982"

##  [1] "902" "918" "923" "924" "930" "932" "934" "935" "937" "953" "957" "962"
## [13] "966" "968" "974" "986" "988" "994"

##          value        wv
## 587 0.01537543 1619.1500
## 338 0.01525597  821.8144
## 709 0.01523666 2301.7500
## 38  0.01523475  445.2482
## 593 0.01522247 1652.8000
## 80  0.01517340  496.5873
```




SLA_C calibration dataset
Reflectance (%)
0.366
0.19
0.015
500
1000
1500
2000
2500
Wavelength (nm)

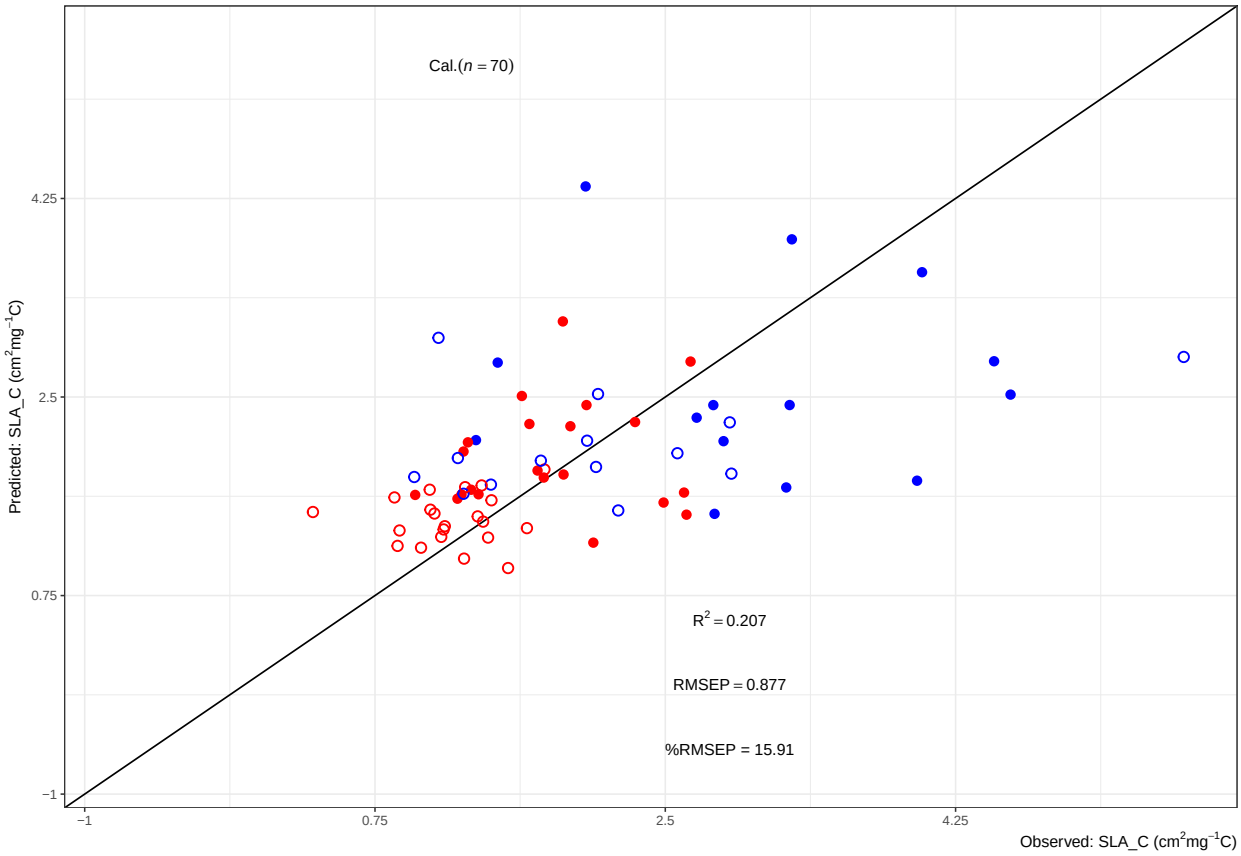

SLA_C validation dataset
Reflectance (%)
0.366
0.19
0.015
500
1000
1500
2000
2500
Wavelength (nm)

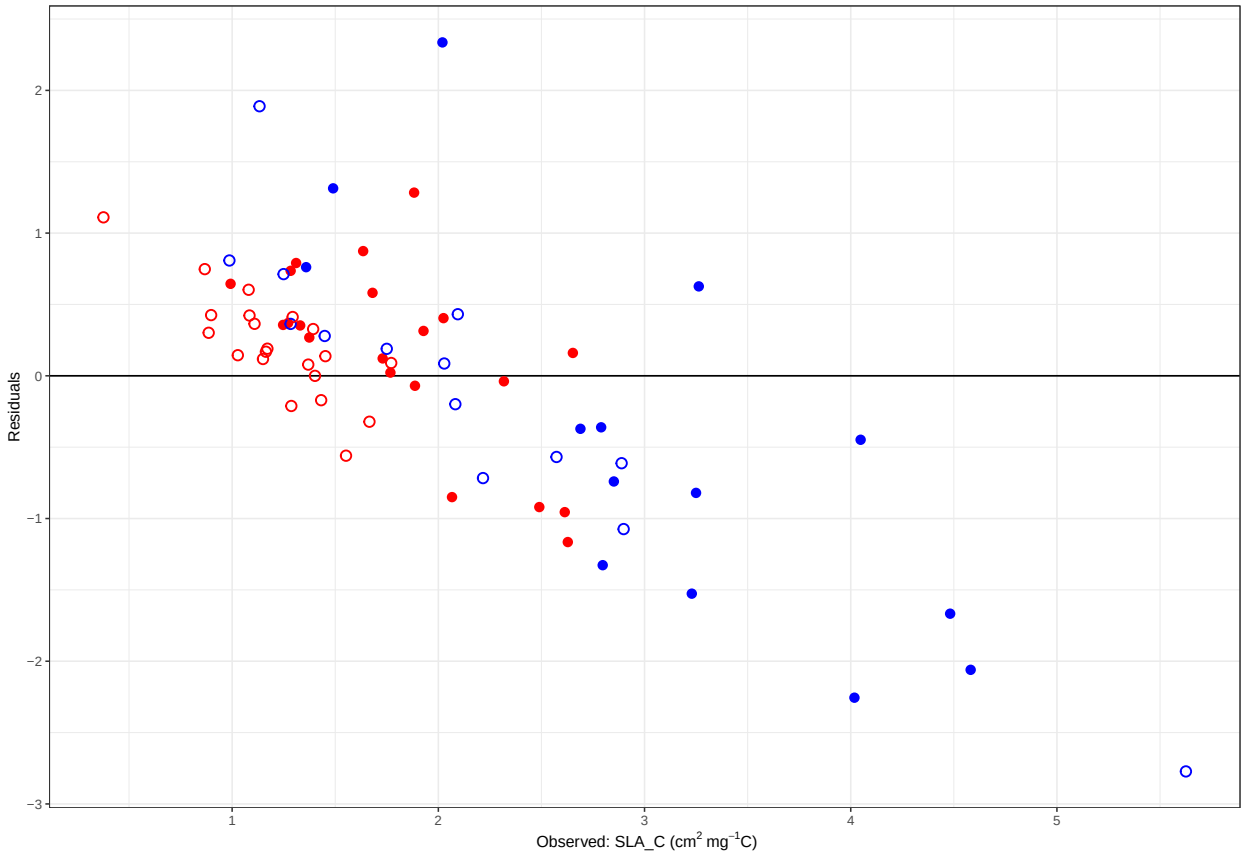

Reflectance (%)
0.0
0.1
0.2
0.3
500
1000
1500
2000
2500
Wavelength (nm)

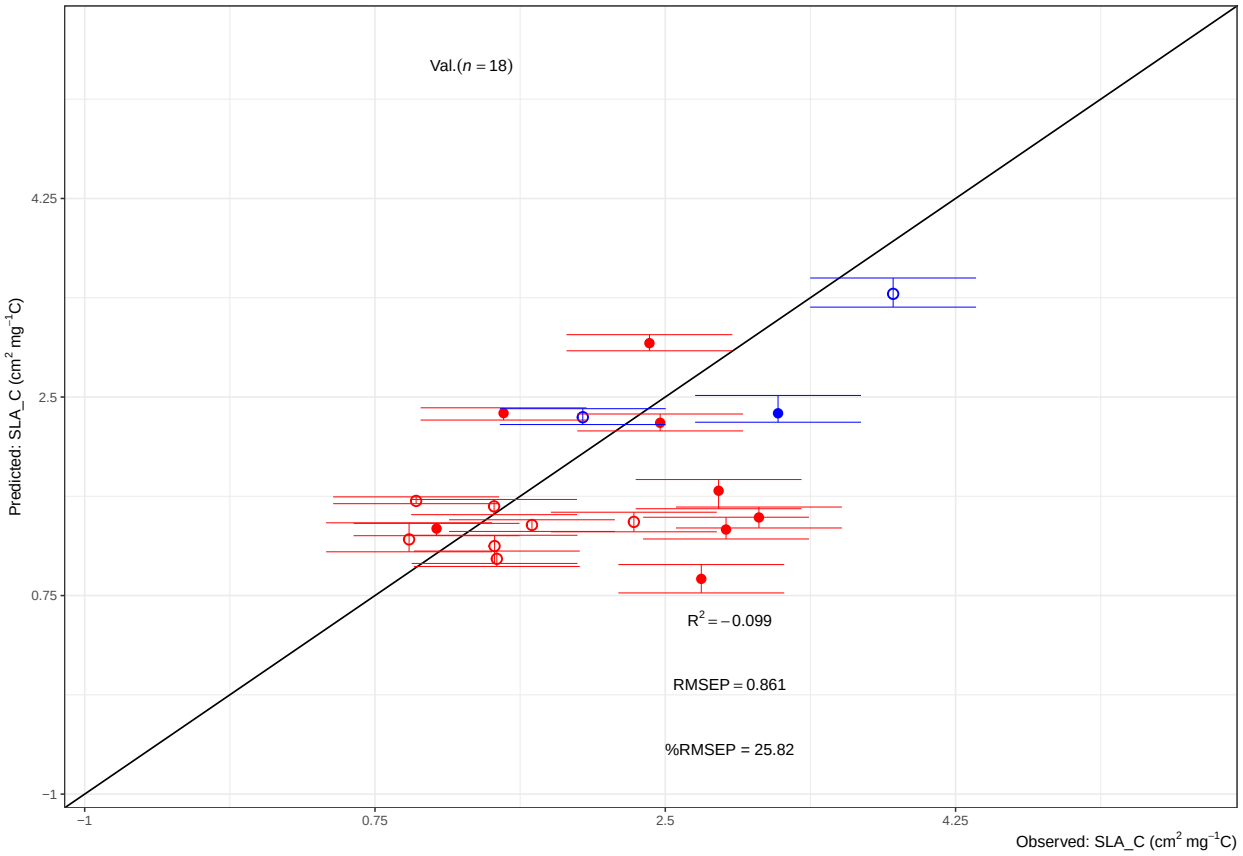


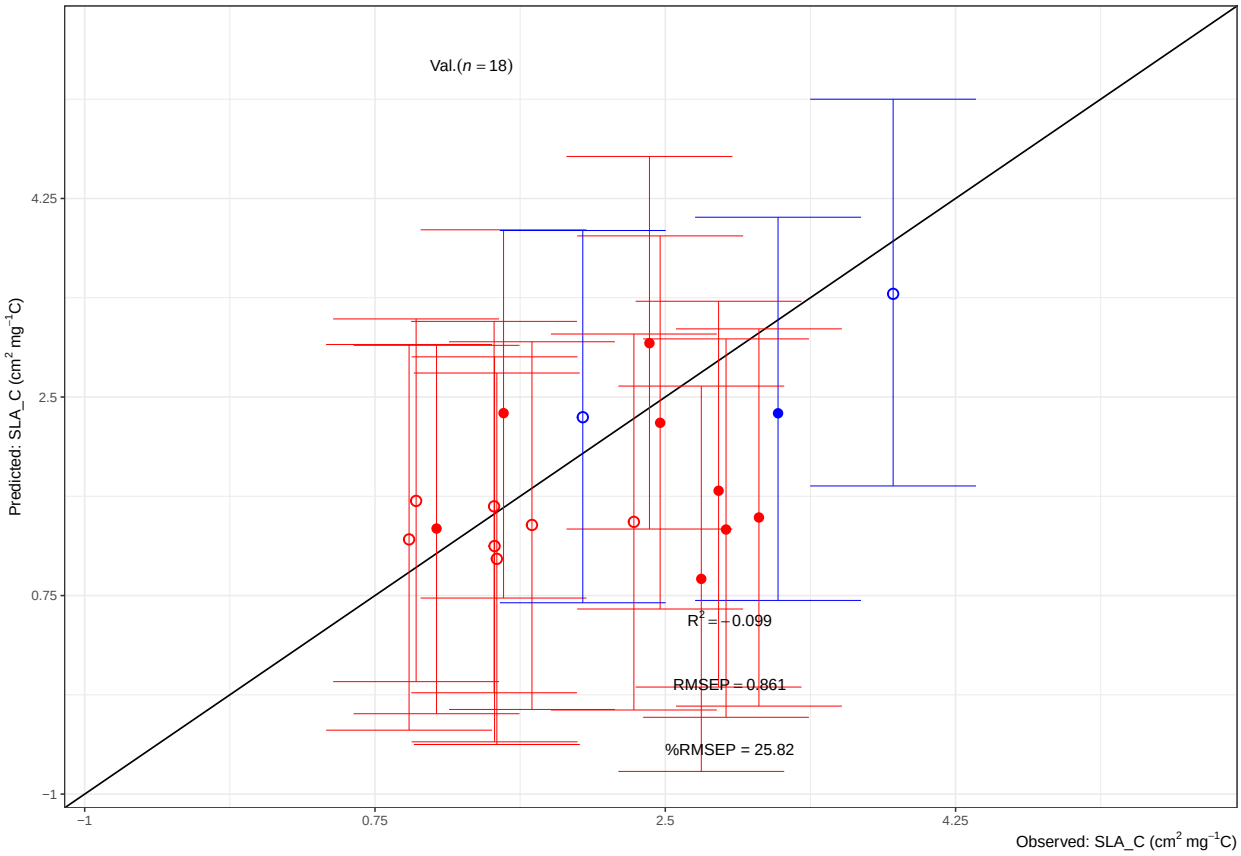

```
##   data_set     R2 RMSEP NRMSEP
## 1      cal  0.207 0.877 16.714
## 2      val -0.099 0.861 29.508
```

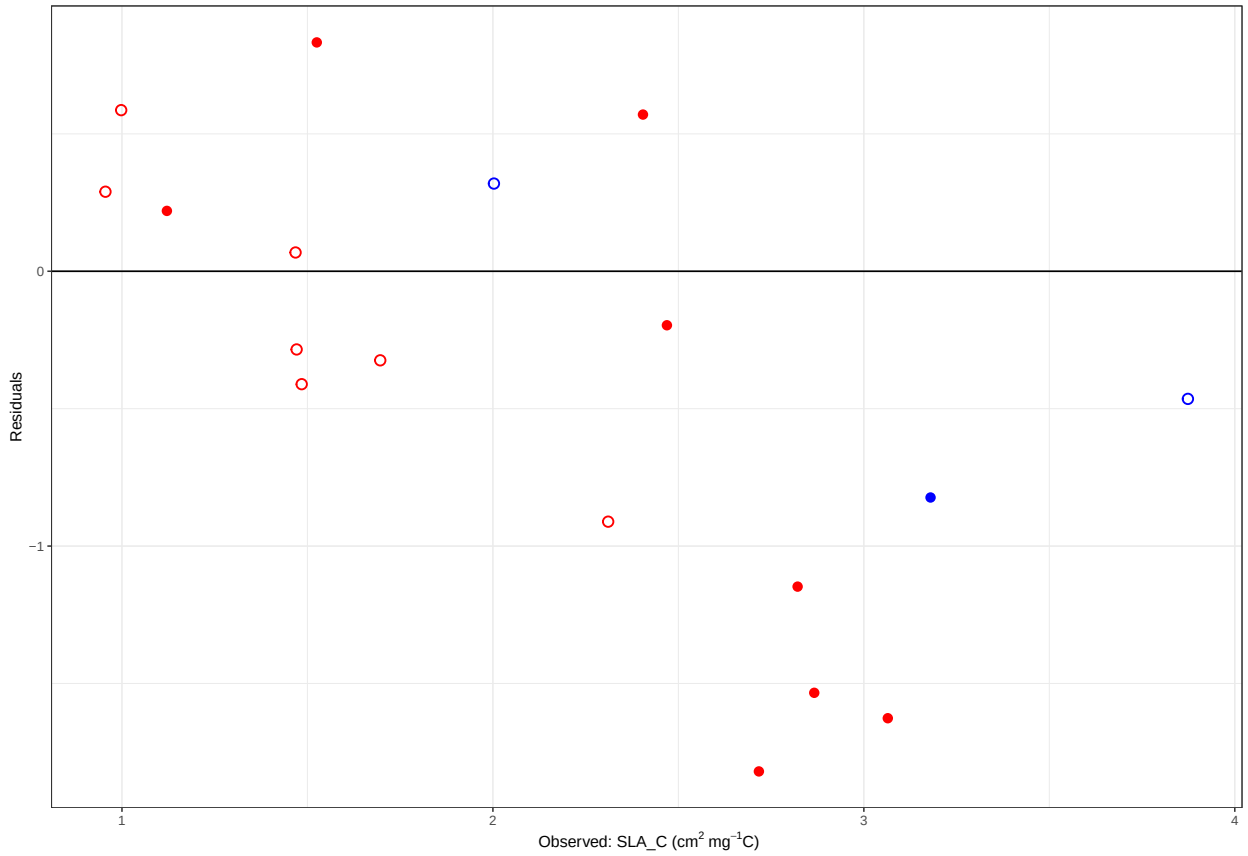
```
##   Observed Predicted  Residuals Treatment Subpop      uci      lci      upi
## 1 3.179768  2.356494 -0.8232740        N1    TRJ 2.513897 2.278011 4.084682
## 2 2.469068  2.272536 -0.1965325        N1    IND 2.350318 2.201115 3.920018
## 3 1.121088  1.340777  0.2196889        N1    IND 1.386489 1.277469 2.955557
## 4 2.404532  2.974689  0.5701562        N1    IND 3.049322 2.907298 4.620265
## 5 2.866228  1.332258 -1.5339704        N1    IND 1.440470 1.248592 3.012248
## 6 2.821430  1.673913 -1.1475172        N1    IND 1.772482 1.515081 3.344074
##           lpi
## 1  0.70722586
## 2  0.63141540
## 3 -0.29159899
## 4  1.33635477
## 5 -0.32318606
## 6 -0.05651097
```


Cal.(n = 70)
R2 = 0.207
RMSEP = 0.877
%RMSEP = 15.91
Predicted: SLA_C (cm2mg−1C)
Observed: SLA_C (cm2mg−1C)
4.25
2.5
0.75
−1
−1
0.75
2.5
4.25


Residuals
2
1
0
−1
−2
−3
1
2
3
4
5
Observed: SLA_C (cm^2 mg^{-1}C)


Val.(n = 18)
4.25
2.5
0.75
−1
Predicted: SLA_C (cm2 mg−1C)
−1
0.75
2.5
4.25
Observed: SLA_C (cm2 mg−1C)
R2 = −0.099
RMSEP = 0.861
%RMSEP = 25.82


Val.(n = 18)
4.25
2.5
0.75
−1
Predicted: SLA_C (cm2 mg−1C)
−1
0.75
2.5
4.25
Observed: SLA_C (cm2 mg−1C)
R2 = −0.099
RMSEP = 0.861
%RMSEP = 25.82




```
##       Iteration Intercept   X992.79   X987.1 X1004.15 X1049.59
## Seg 1         1  2.565435 -11.27901 4.131551 4.509563 3.681251
## Seg 2         2  3.244470 -11.36172 4.001184 4.420323 3.490347
## Seg 3         3  2.818857 -11.20707 4.148447 4.486348 3.362018
## Seg 4         4  3.435570 -11.37979 4.059744 4.452092 3.475903
## Seg 5         5  3.250071 -11.30785 4.048070 4.441747 3.474999
## Seg 6         6  3.164854 -11.41396 4.041190 4.427193 3.483408
```

```
##              coefs
## 992.79  -11.280272
## 987.1     4.045525
## 1004.15   4.441206
## 1049.59   3.477618
## 1100.64   3.826321
## 1117.64   3.487192
```