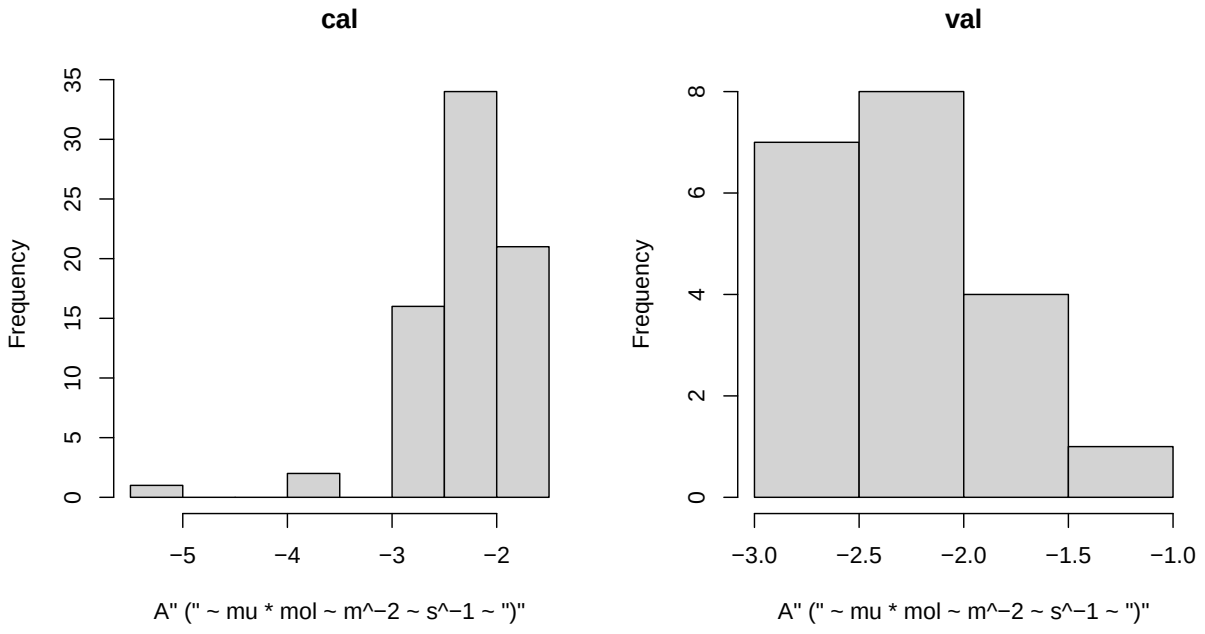
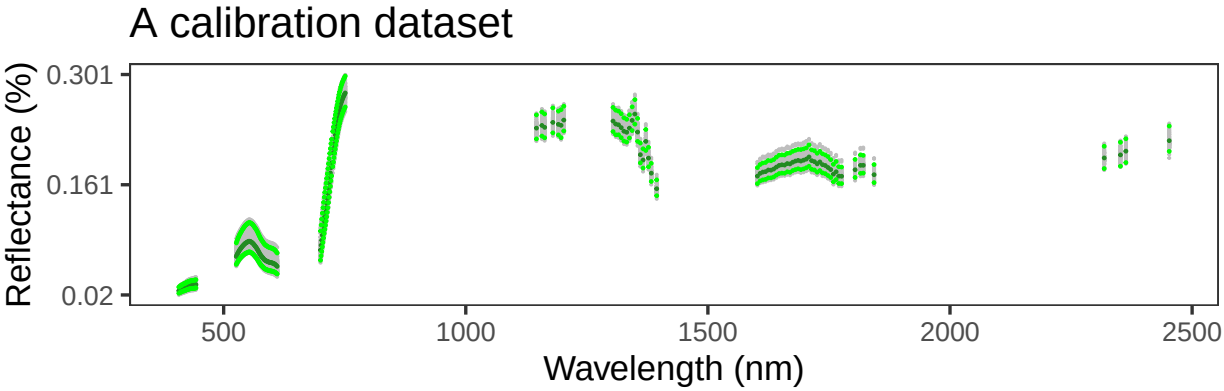
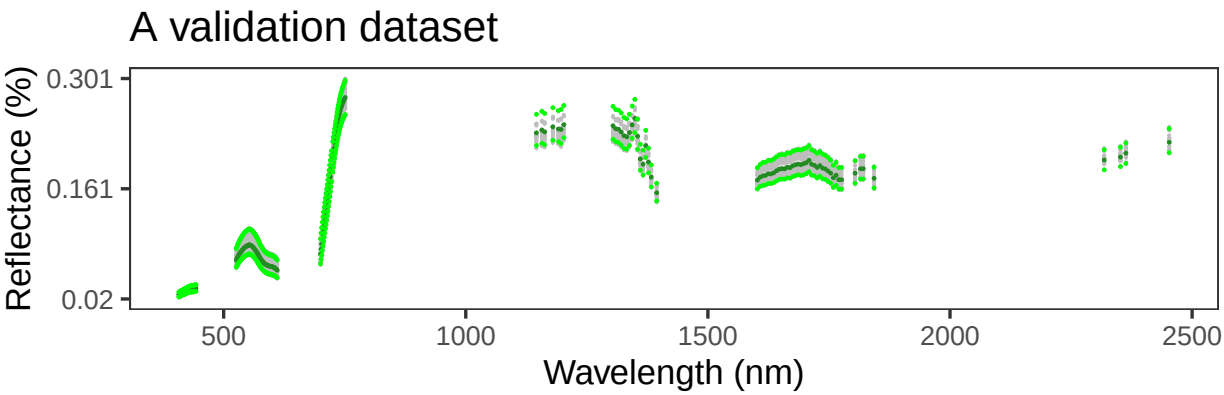
Use side-view HSI data to predict A

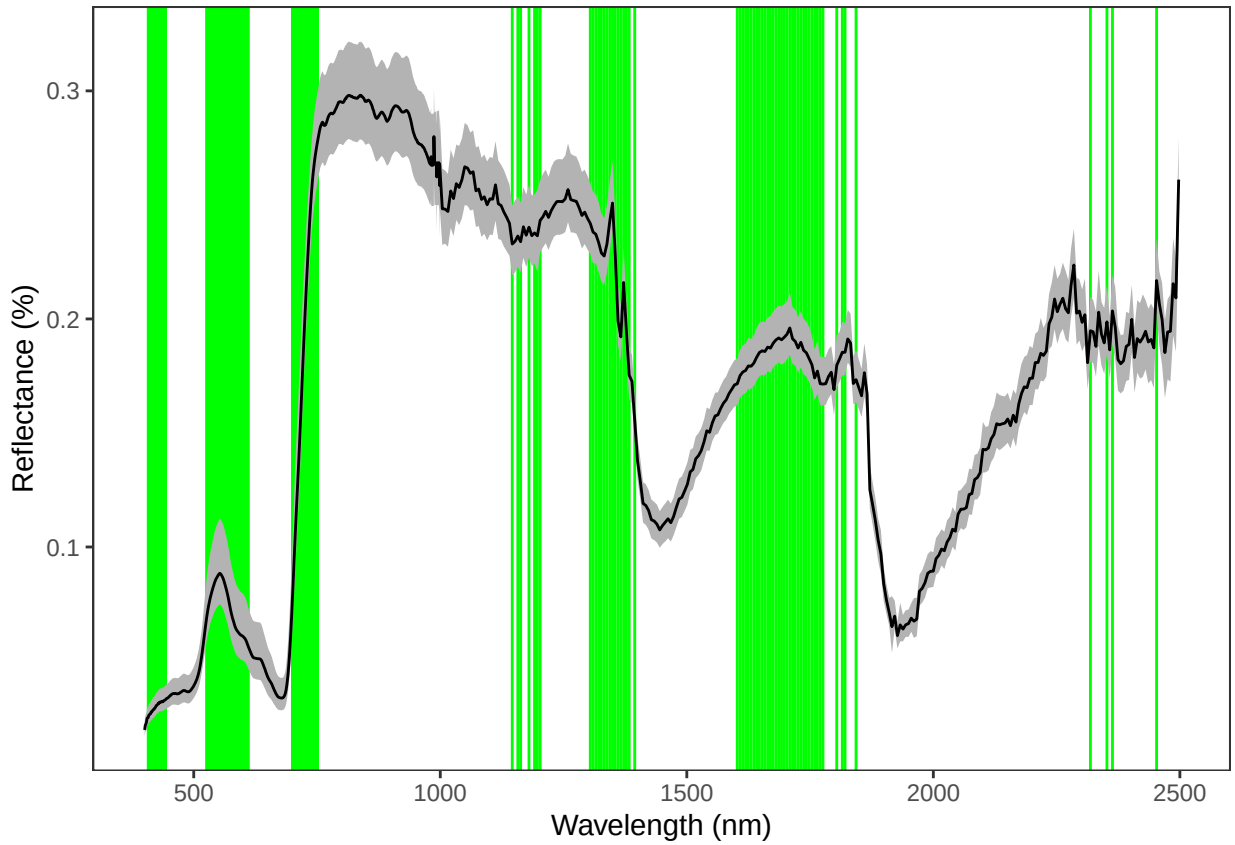
2023-08-07

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

##  [1] "908" "916" "905" "917" "926" "930" "937" "941" "913" "919" "933" "907"
## [13] "945" "931" "923" "938" "904" "946" "936" "911" "920" "909" "924" "943"
## [25] "934" "929" "939" "927" "944" "925" "914" "921" "928" "922" "918" "915"
## [37] "910" "982" "996" "975" "970" "957" "976" "952" "964" "971" "981" "973"
## [49] "978" "979" "986" "993" "990" "972" "959" "958" "965" "980" "983" "977"
## [61] "951" "960" "987" "988" "955" "989" "954" "985" "963" "969" "967" "962"
## [73] "968" "961"

##  [1] "902" "903" "906" "912" "932" "935" "940" "942" "947" "948" "950" "953"
## [13] "956" "966" "974" "984" "991" "992" "994" "995"

##          value        wv
## 283 0.03128856  751.0609
## 505 0.03123679 1157.2800
## 503 0.03118430 1145.9600
## 243 0.03106237  700.0878
## 263 0.03105492  725.5234
## 104 0.03098334  526.1256
```




A calibration dataset
Reflectance (%)
0.301
0.161
0.02
500
1000
1500
2000
2500
Wavelength (nm)

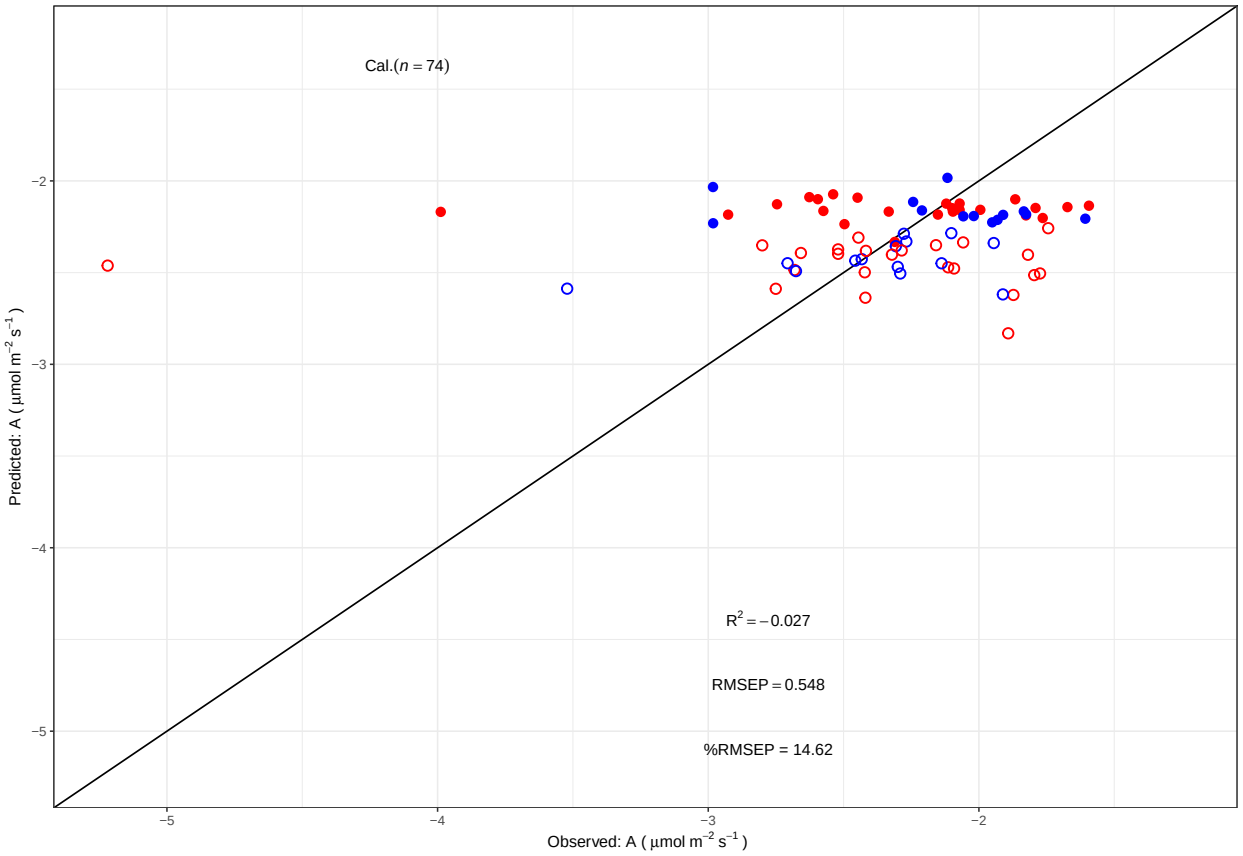

A validation dataset
Reflectance (%)
0.301
0.161
0.02
500
1000
1500
2000
2500
Wavelength (nm)

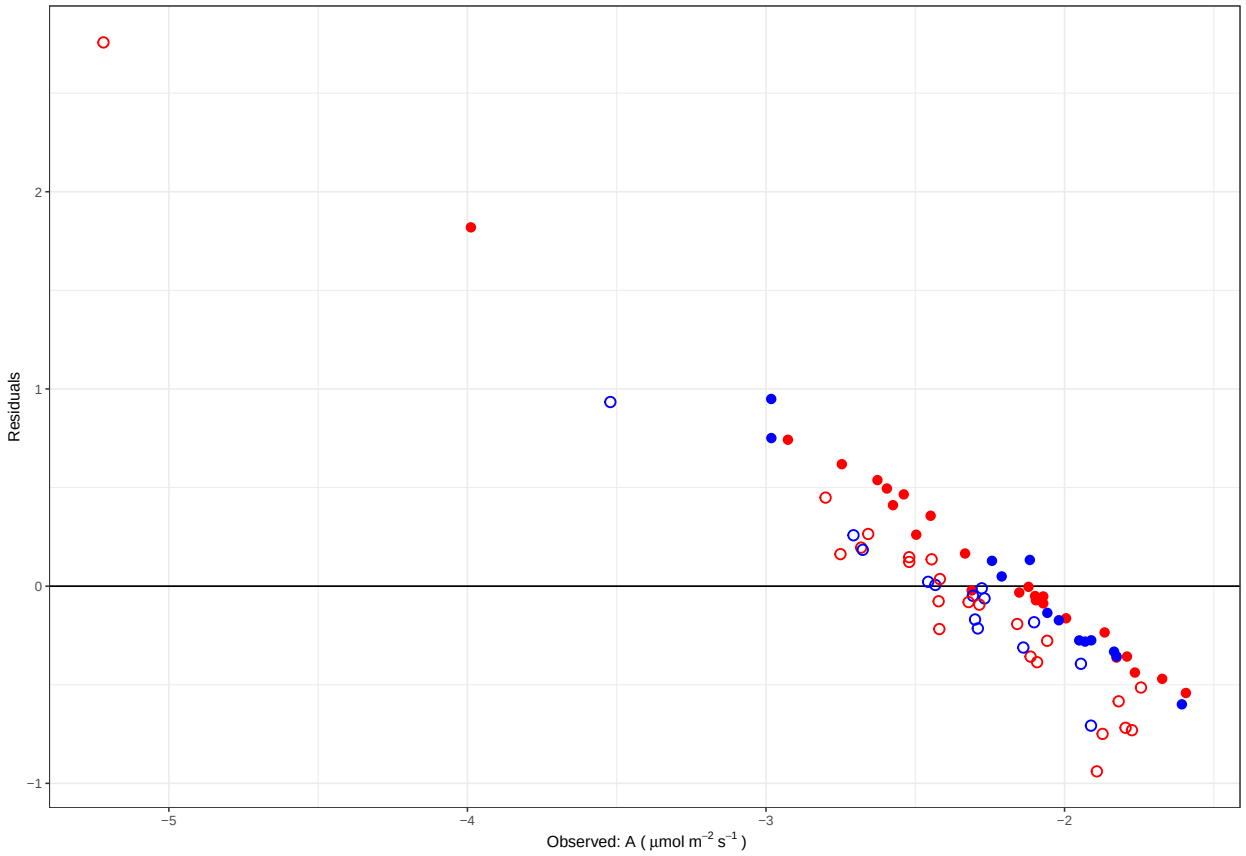


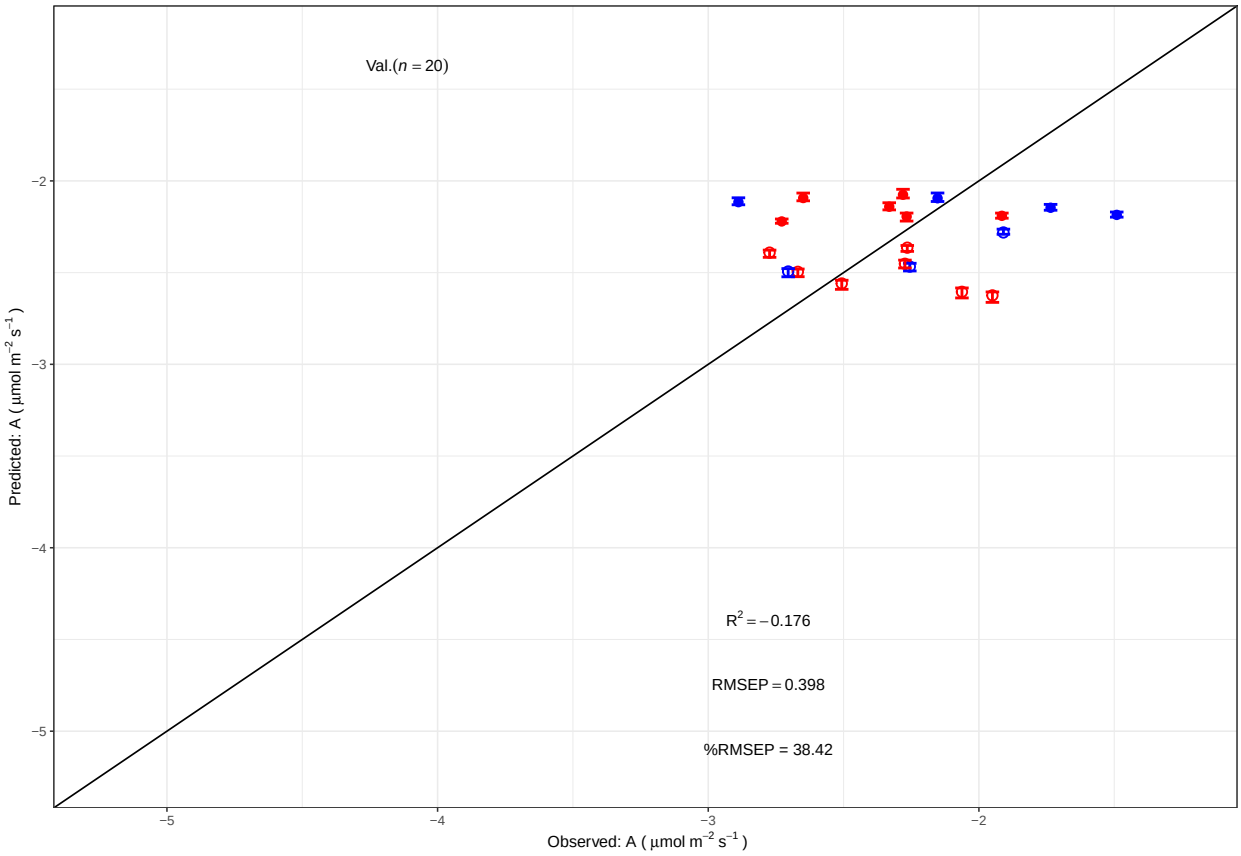

```
## pdf
##   2
```

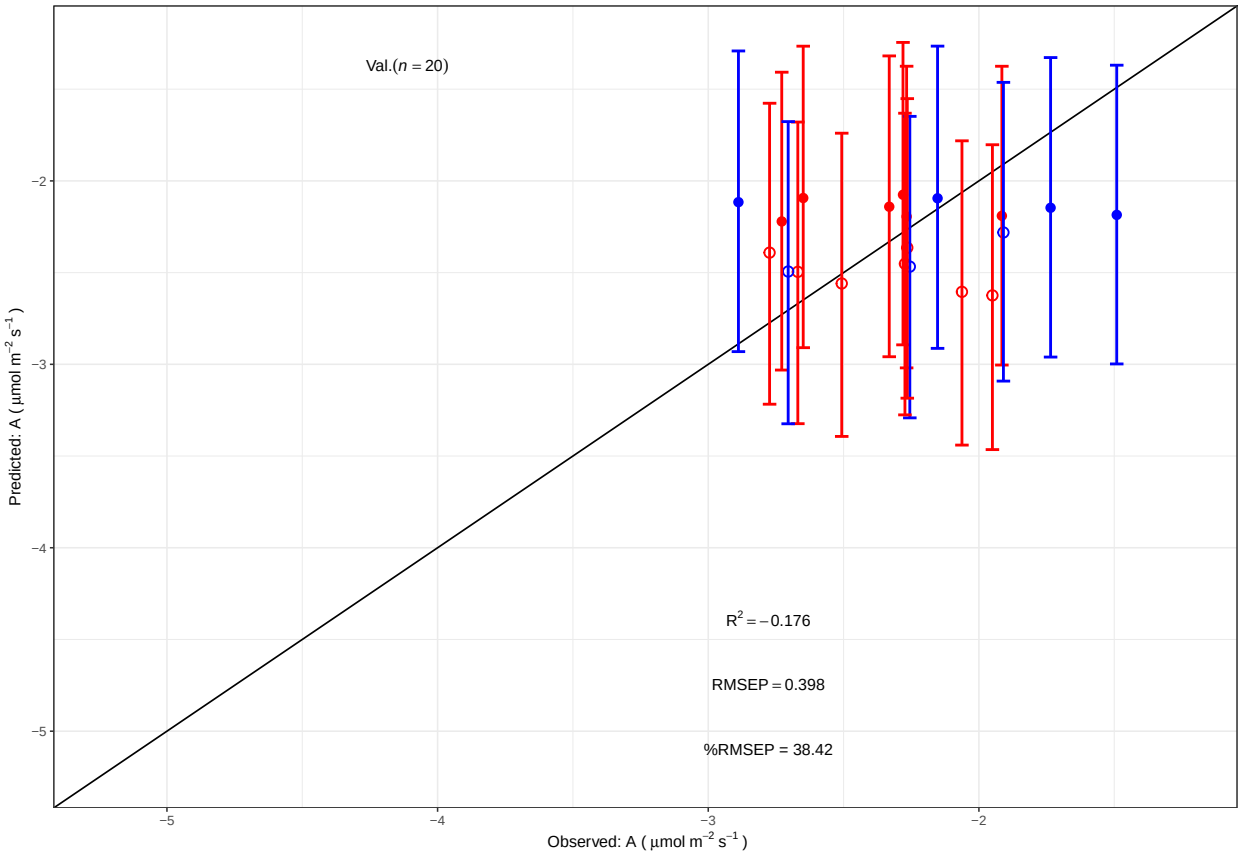
```
##   data_set     R2 RMSEP NRMSEP
## 1      cal -0.027 0.548 15.114
## 2      val -0.176 0.398 28.502
```

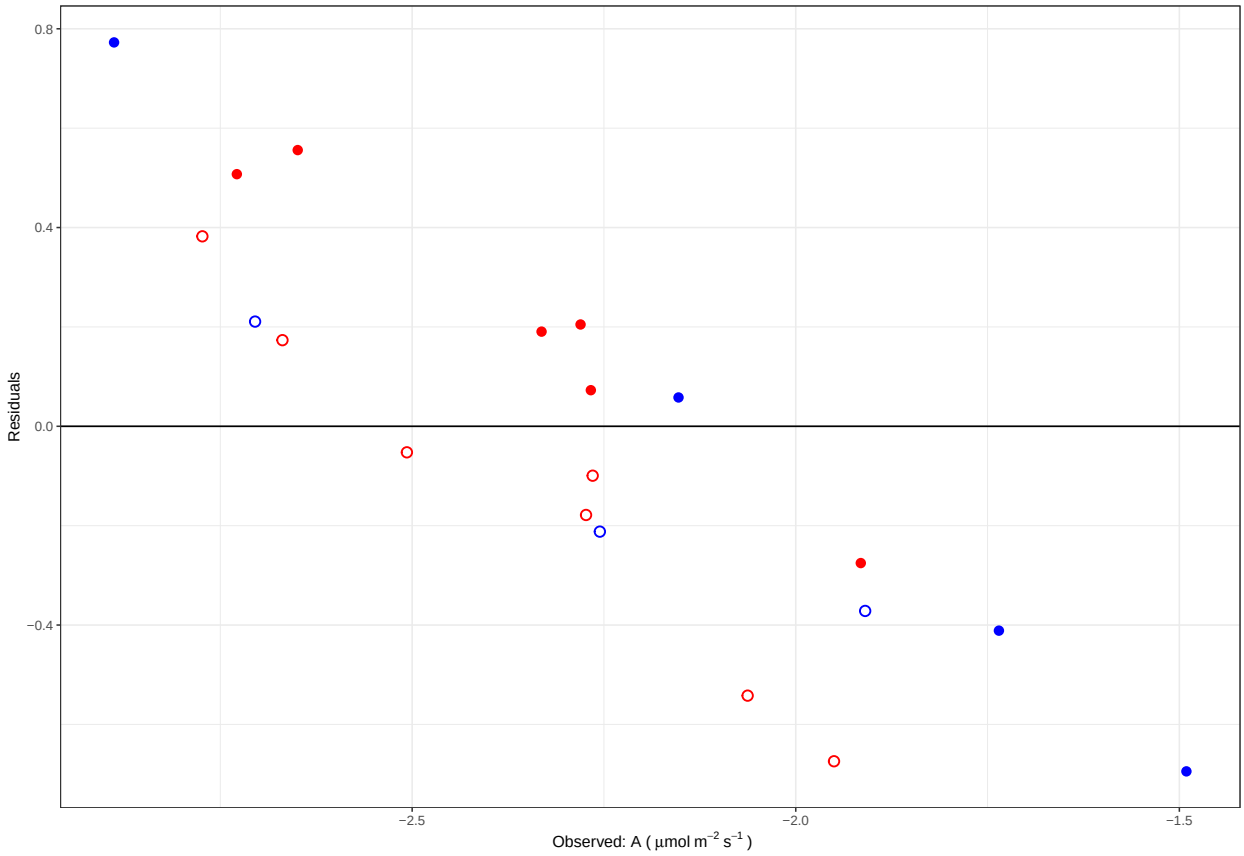
```
##    Observed Predicted   Residuals Treatment Subpop       uci       lci
## 1 -2.888528 -2.115922  0.77260601        N1    TRJ -2.092220 -2.130188
## 2 -2.152810 -2.094805  0.05800581        N1    TRJ -2.066086 -2.112264
## 3 -2.649164 -2.093279  0.55588554        N1    IND -2.066316 -2.108570
## 4 -1.735186 -2.146477 -0.41129040        N1    TRJ -2.128191 -2.159961
## 5 -1.915223 -2.190490 -0.27526711        N1    IND -2.175514 -2.203467
## 6 -2.331329 -2.140793  0.19053680        N1    IND -2.119293 -2.158055
##         upi       lpi
## 1 -1.291614 -2.930794
## 2 -1.265308 -2.913042
## 3 -1.265605 -2.909282
## 4 -1.327711 -2.960441
## 5 -1.375139 -3.003841
## 6 -1.318707 -2.958642
```


Cal.(n = 74)
R2 = −0.027
RMSEP = 0.548
%RMSEP = 14.62
Predicted: A (µmol m−2 s−1)
Observed: A (µmol m−2 s−1)
−2
−3
−4
−5


Residuals
2
1
0
−1
−5
−4
−3
−2
Observed: A (µmol m−2 s−1)


Val.(n = 20)
R2 = −0.176
RMSEP = 0.398
%RMSEP = 38.42
Predicted: A (µmol m−2 s−1)
Observed: A (µmol m−2 s−1)
−2
−3
−4
−5


Val.(n = 20)
R2 = −0.176
RMSEP = 0.398
%RMSEP = 38.42
Predicted: A (µmol m−2 s−1)
Observed: A (µmol m−2 s−1)
−2
−3
−4
−5




```
##       Iteration Intercept    X1708.86    X1697.65 X559.53165    X1720.06
## Seg 1         1 0.2461636 -0.05311716 -0.04664304 -0.1744074 -0.04441625
## Seg 2         2 0.4055613 -0.05592178 -0.04905611 -0.1825250 -0.04660051
## Seg 3         3 0.3469880 -0.05469507 -0.04796911 -0.1771882 -0.04543529
## Seg 4         4 0.2927205 -0.05413386 -0.04752677 -0.1753124 -0.04514588
## Seg 5         5 0.3598025 -0.05447254 -0.04740823 -0.1794984 -0.04489350
## Seg 6         6 0.3901077 -0.05265246 -0.04594170 -0.1848810 -0.04369116
```

```
##                coefs
## 1708.86   -0.05435216
## 1697.65   -0.04770165
## 559.53165 -0.17660586
## 1720.06   -0.04525659
## 562.01355 -0.17552325
## 558.29107 -0.17666961
```