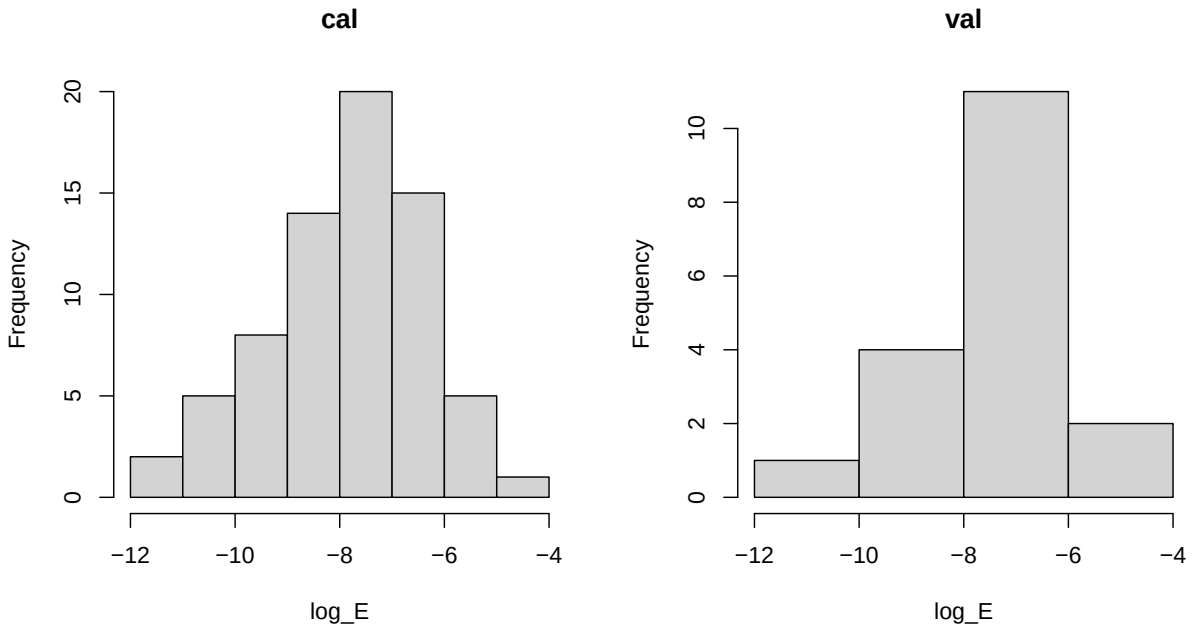
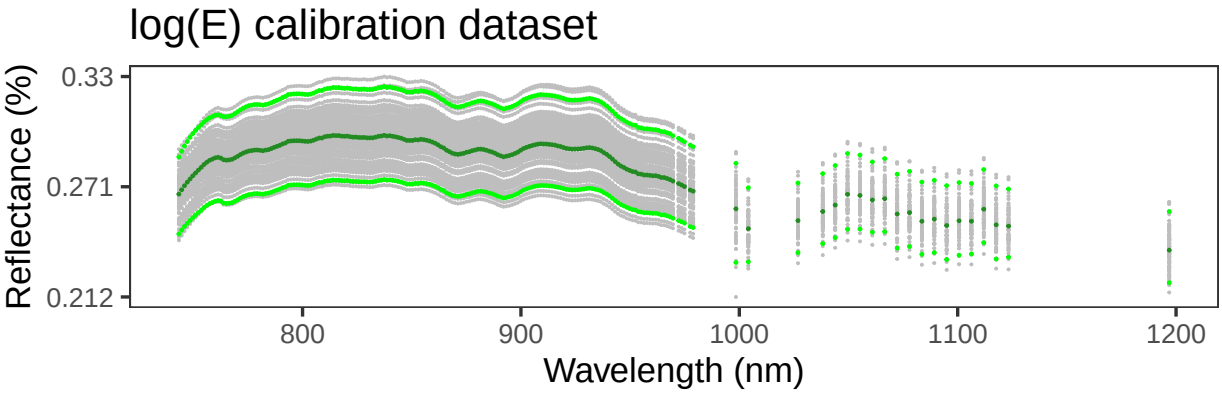
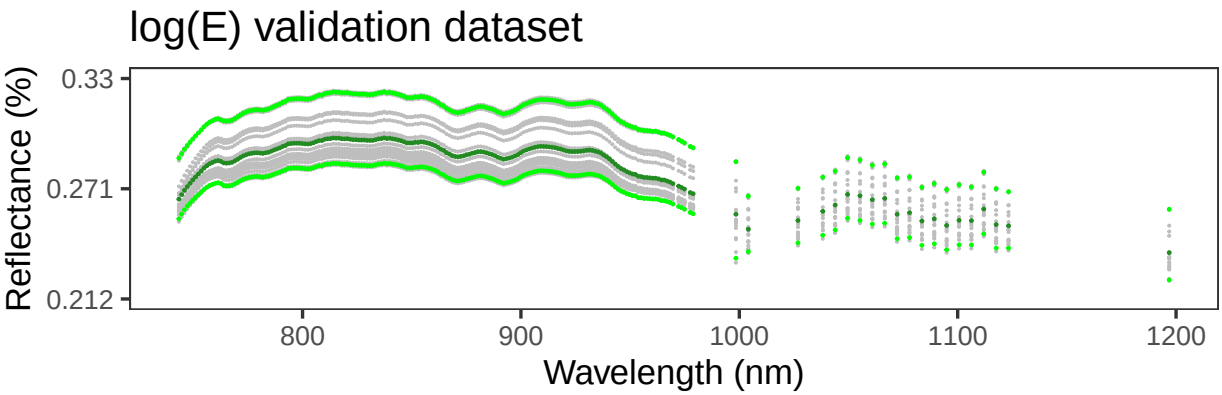
Use side-view HSI data to predict E

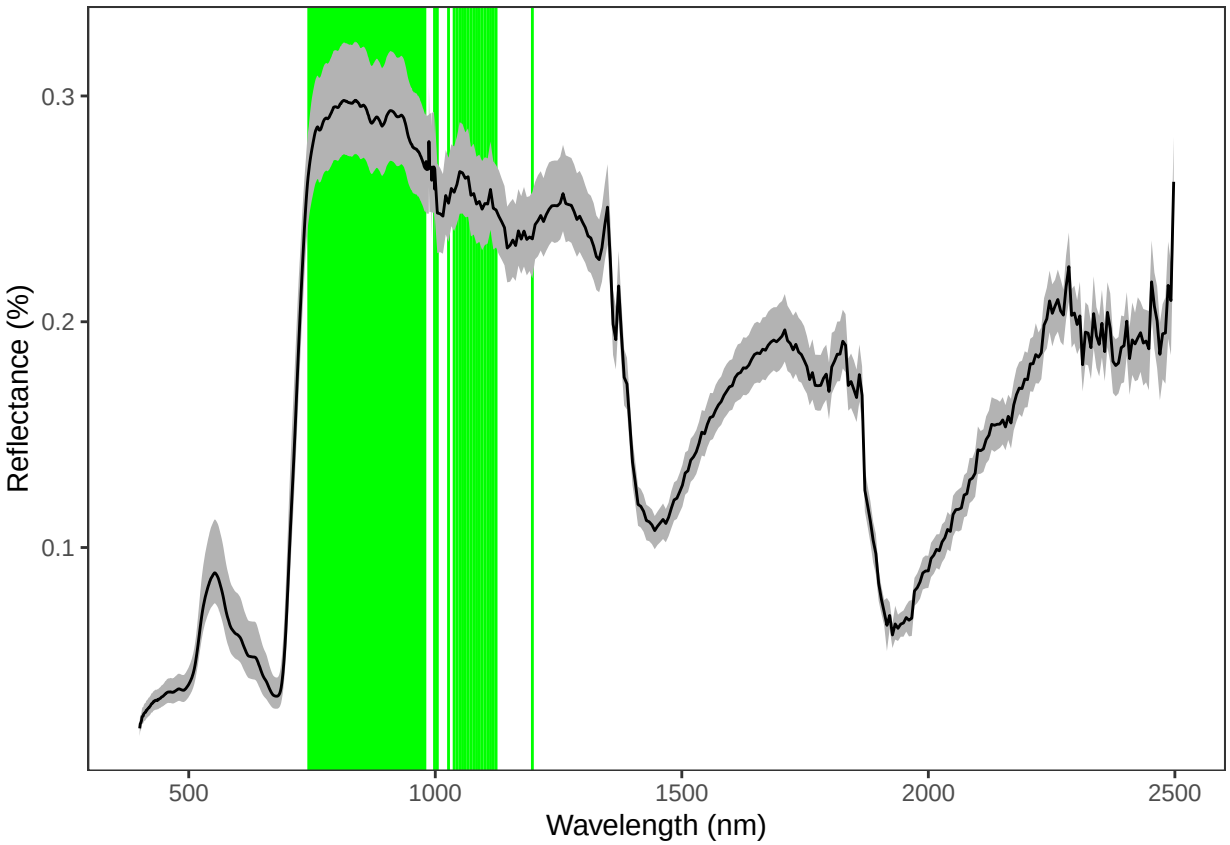
2023-08-08

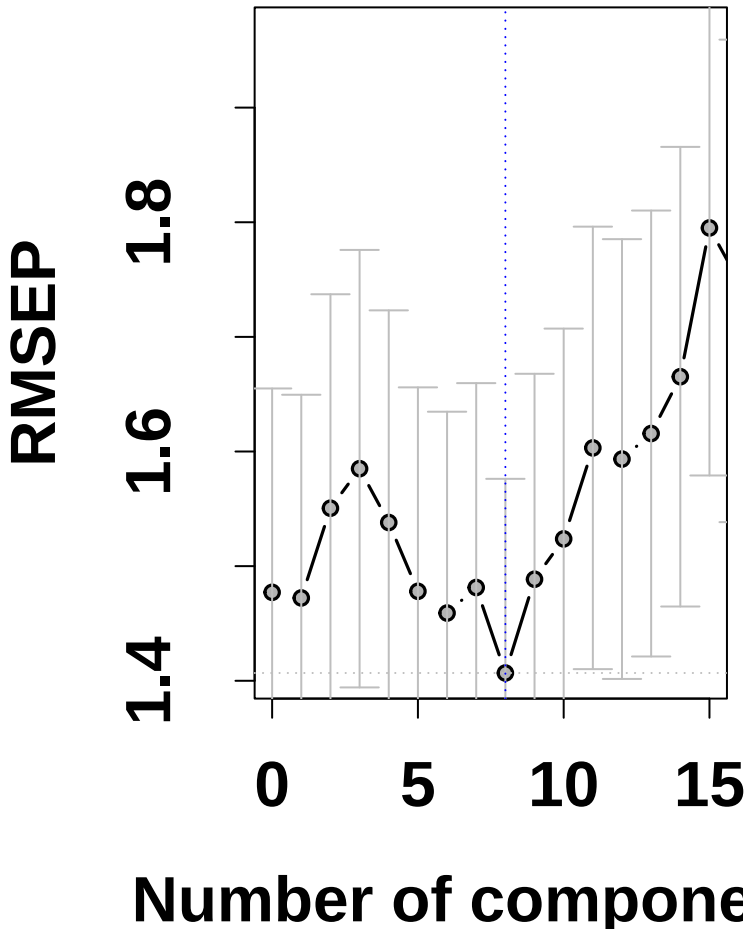
```
## $plsralg
## [1] "oscorespls"

##  [1] "906" "911" "915" "914" "933" "929" "948" "947" "909" "902" "944" "931"
## [13] "904" "923" "918" "921" "919" "908" "925" "941" "917" "910" "912" "938"
## [25] "916" "930" "903" "905" "946" "935" "942" "939" "936" "943" "987" "990"
## [37] "962" "981" "984" "951" "969" "954" "977" "963" "959" "972" "953" "985"
## [49] "950" "994" "965" "971" "980" "991" "983" "989" "968" "992" "979" "986"
## [61] "995" "956" "967" "955" "952" "993" "996" "958" "964" "988"

##  [1] "913" "920" "922" "924" "927" "934" "937" "940" "945" "957" "960" "961"
## [13] "970" "973" "974" "975" "976" "982"

##          value        wv
## 499 0.03481354 1123.3100
## 482 0.03477919 1026.8800
## 457 0.03476960  977.5367
## 451 0.03428134  969.5988
## 485 0.03423118 1043.9100
## 458 0.03421479  978.8606
```




log(E) calibration dataset
Reflectance (%)
0.33
0.271
0.212
800
900
1000
1100
1200
Wavelength (nm)

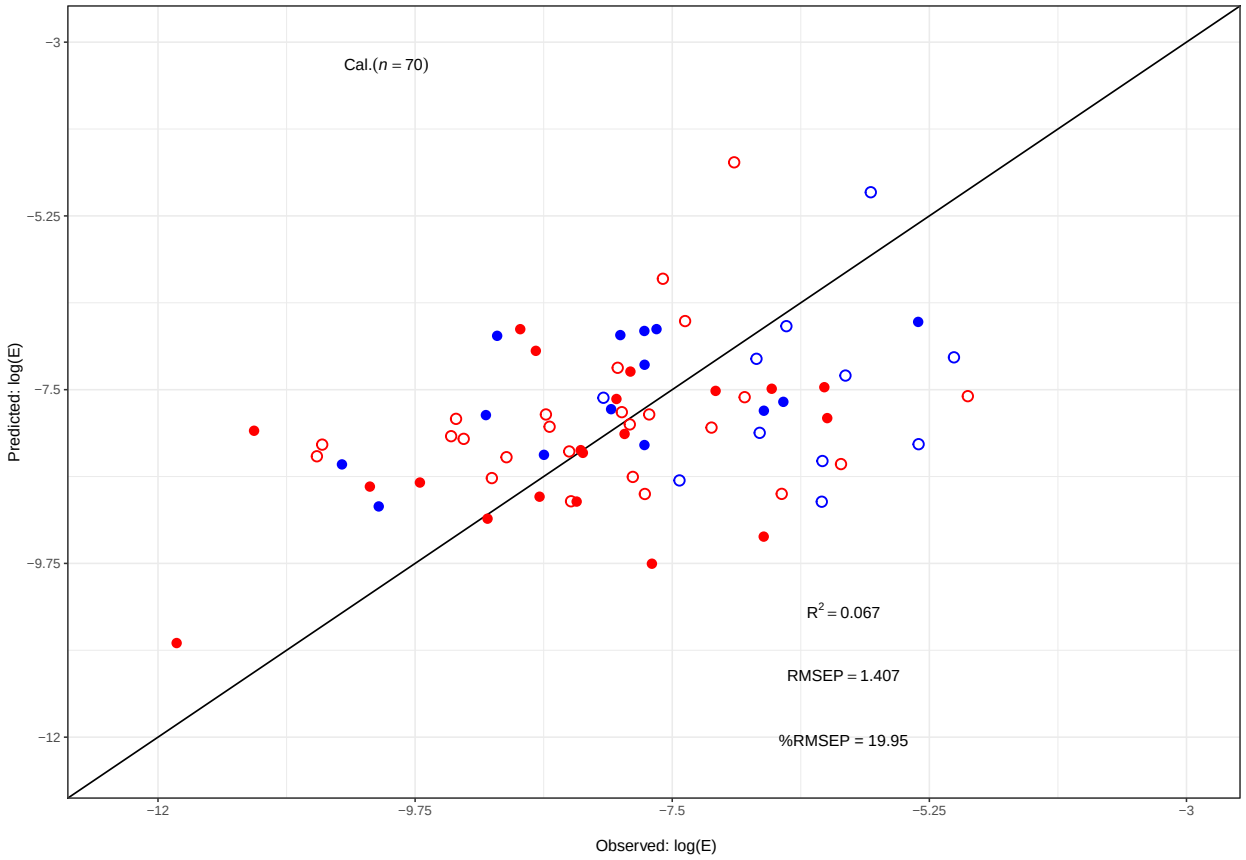

log(E) validation dataset
Reflectance (%)
0.33
0.271
0.212
800
900
1000
1100
1200
Wavelength (nm)

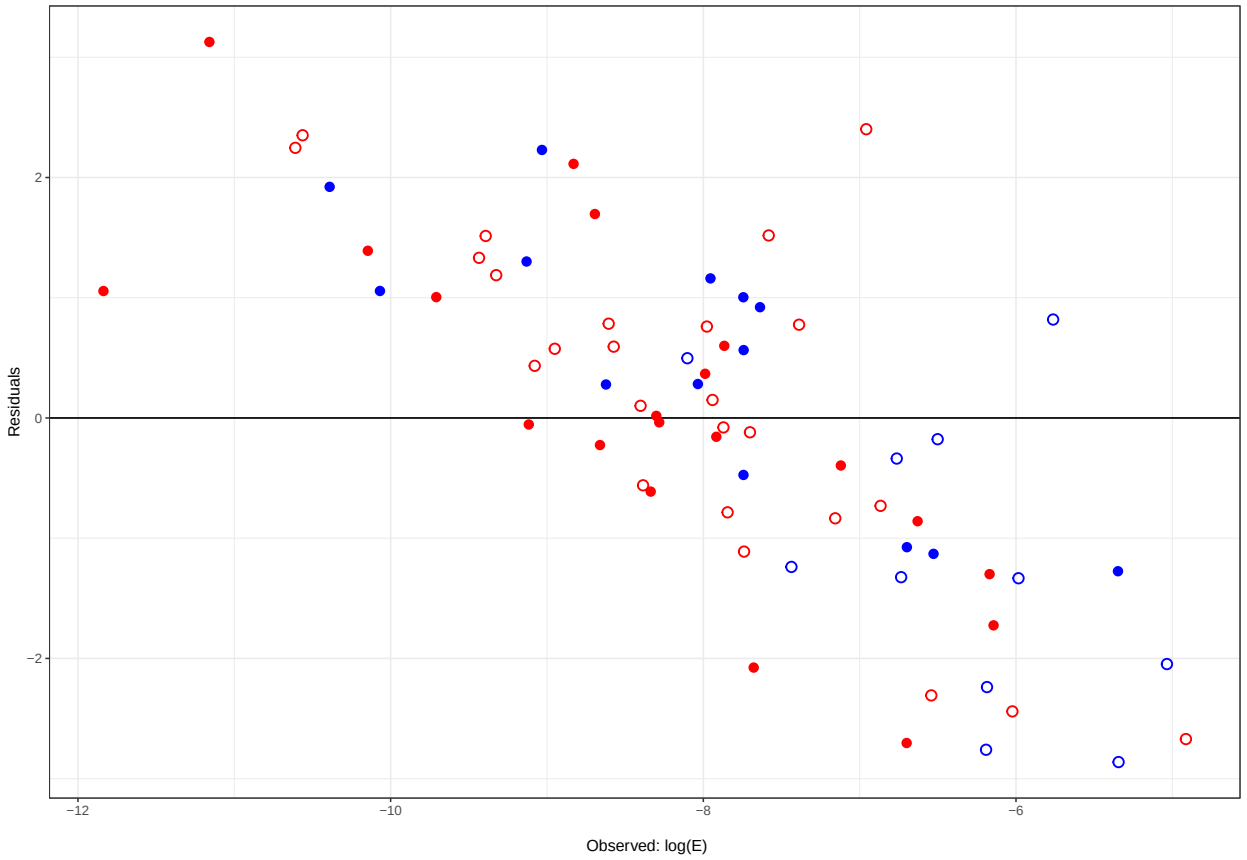

0.3
0.2
0.1
Reflectance (%)
500
1000
1500
2000
2500
Wavelength (nm)

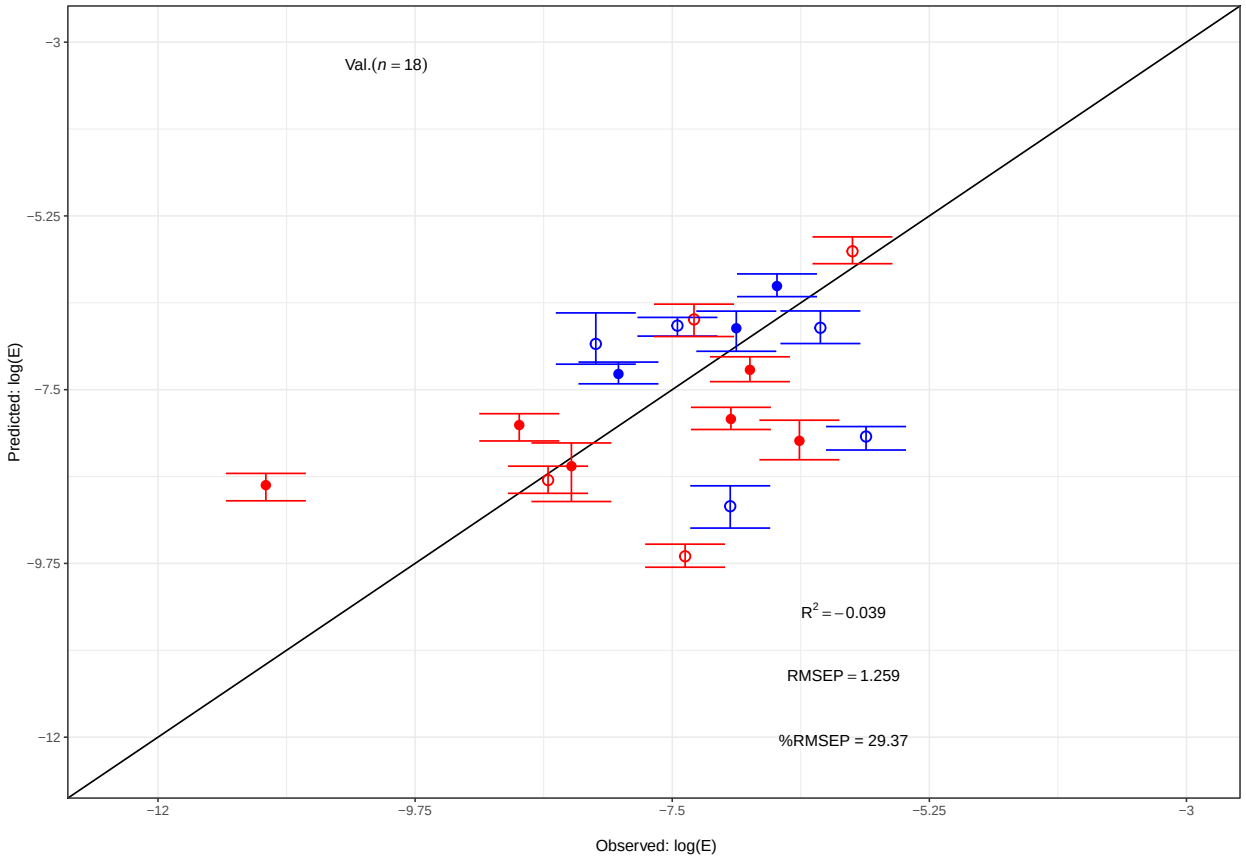


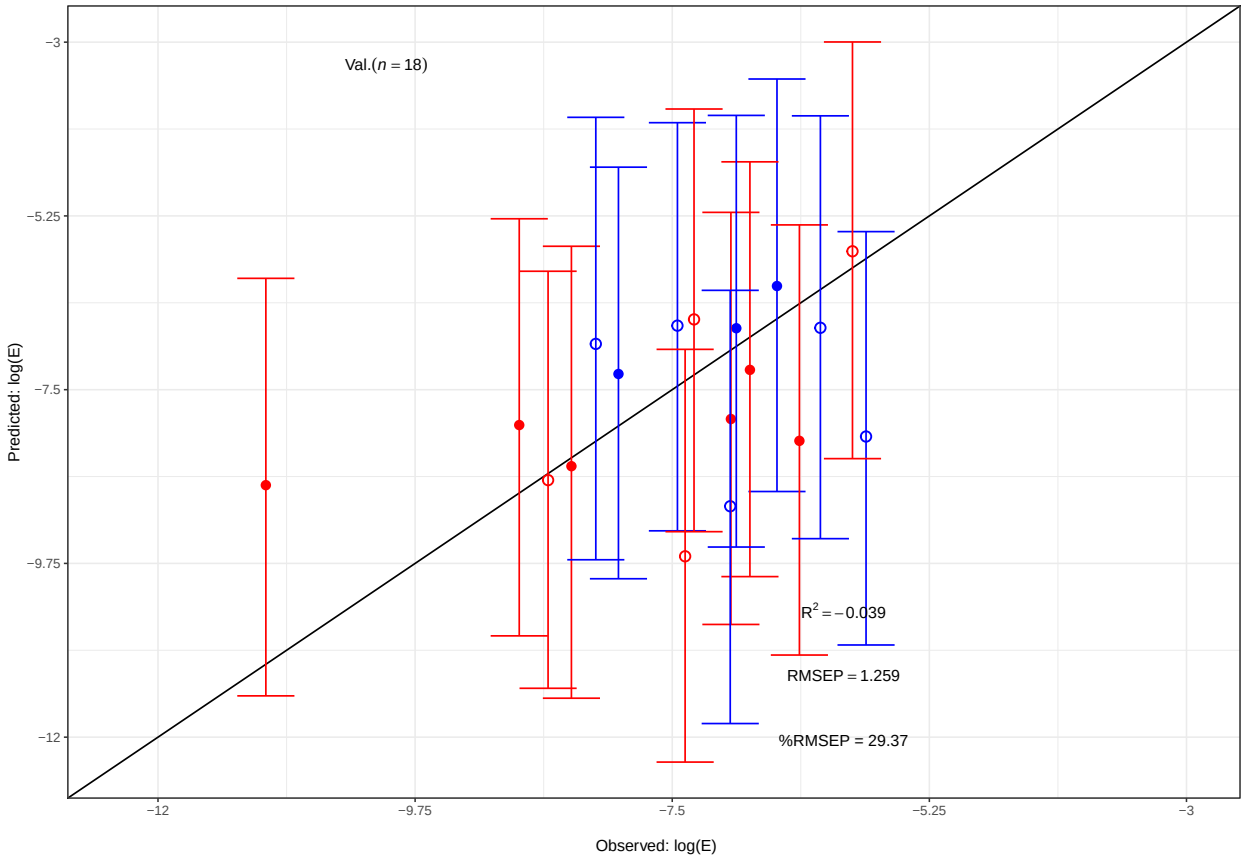

```
##   data_set     R2 RMSEP NRMSEP
## 1      cal  0.067 1.407 20.319
## 2      val -0.039 1.259 23.973
```

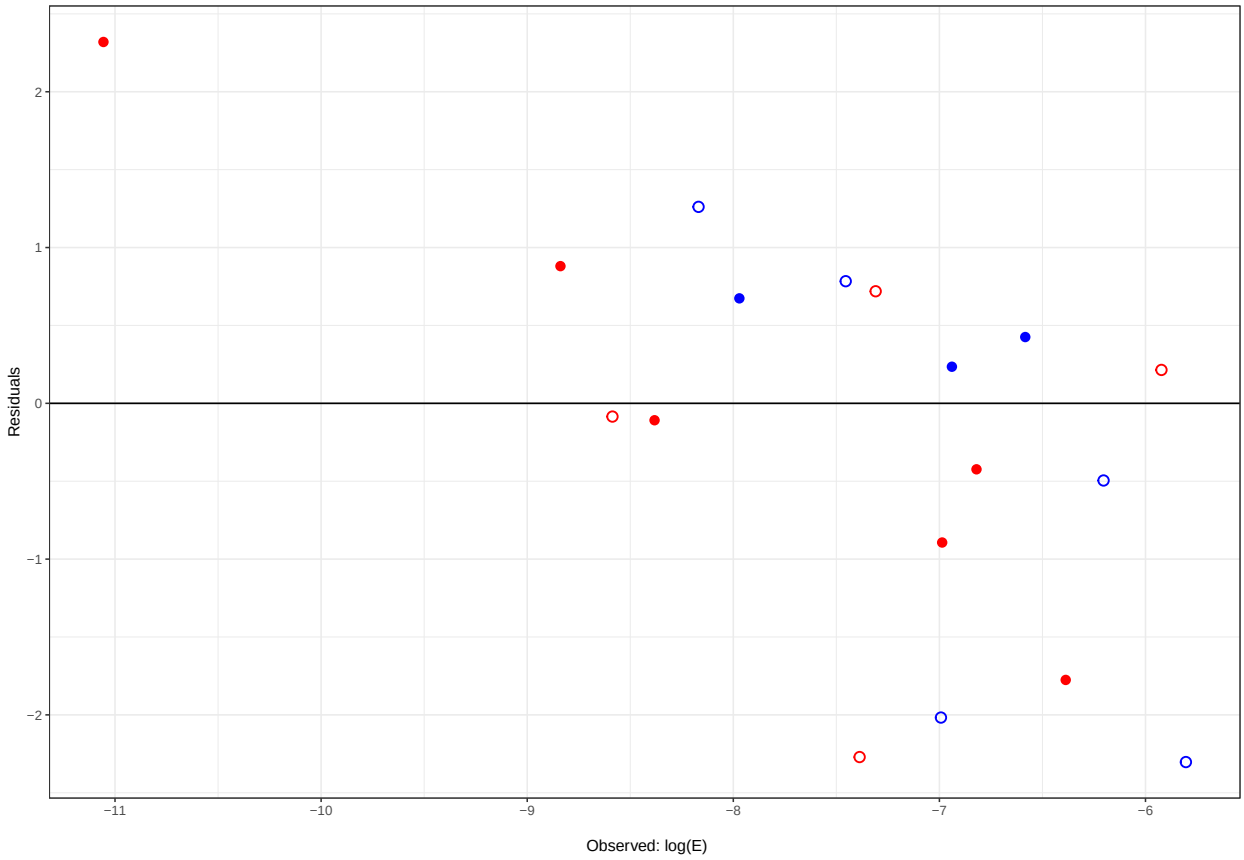
```
##     Observed Predicted  Residuals Treatment Subpop       uci       lci
## 1  -8.838722 -7.958237  0.8804847        N1    IND -7.811104 -8.164309
## 2  -6.583387 -6.157924  0.4254626        N1    TRJ -6.001054 -6.295385
## 3  -8.382170 -8.490921 -0.1087511        N1    IND -8.190249 -8.948236
## 4 -11.056113 -8.736553  2.3195600        N1    IND -8.584337 -8.939110
## 5  -7.970556 -7.296821  0.6737349        N1    TRJ -7.142814 -7.424160
## 6  -6.986577 -7.880105 -0.8935282        N1    IND -7.728806 -8.015619
##         upi        lpi
## 1 -5.287152 -10.688261
## 2 -3.477363  -8.819075
## 3 -5.642988 -11.495498
## 4 -6.058383 -11.465063
## 5 -4.618679  -9.948294
## 6 -5.204122 -10.540303
```


Cal.(n = 70)
Predicted: log(E)
Observed: log(E)
−3
−5.25
−7.5
−9.75
−12
R2 = 0.067
RMSEP = 1.407
%RMSEP = 19.95


Residuals
2
0
−2
−12
−10
−8
−6
Observed: log(E)


Val.(n = 18)
R2 = −0.039
RMSEP = 1.259
%RMSEP = 29.37
Predicted: log(E)
Observed: log(E)
−3
−5.25
−7.5
−9.75
−12


Val.(n = 18)
R² = −0.039
RMSEP = 1.259
%RMSEP = 29.37
Predicted: log(E)
Observed: log(E)
−3
−5.25
−7.5
−9.75
−12




```
##       Iteration Intercept X757.46119 X756.18063 X758.74202  X760.0231
## Seg 1         1 -22.59348 -10.000814  -26.00960  -23.32128 -13.801995
## Seg 2         2 -23.09249  -5.720646  -21.63772  -20.19204 -10.954033
## Seg 3         3 -22.66264  -4.736993  -20.08637  -19.11391  -9.873441
## Seg 4         4 -22.82055  -7.209596  -23.17748  -22.08040 -12.616150
## Seg 5         5 -24.01884  -4.125551  -18.54344  -17.41881  -4.477265
## Seg 6         6 -23.67186  -4.337199  -20.82347  -19.09016  -8.954401
```

```
##                coefs
## 757.46119  -5.700634
## 756.18063 -21.583527
## 758.74202 -20.005865
## 760.0231  -10.708183
## 754.90031 -19.350819
## 761.30443 -13.581256
```