S1 The seasonal variation of C_{ref}

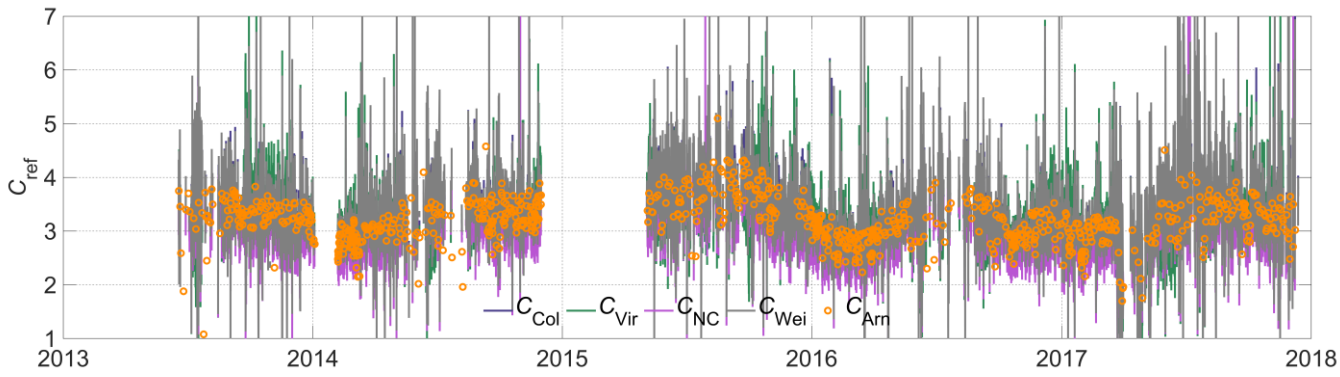

Figure S1. The time series of C_{ref} for different correction algorithms.

The time series of C_{ref}, presented in Fig. S1, already indicates that the C_{ref} has a seasonal cycle. From the time series it seems that the C_{ref} has its minima in spring. During the summer the C_{ref} increases and reaches its maxima in autumn. The seasonal variation of the C_{ref} is studied in more detail in Figs. S2a-e, where the average values of the C_{ref} for different algorithms are presented for each month separately.

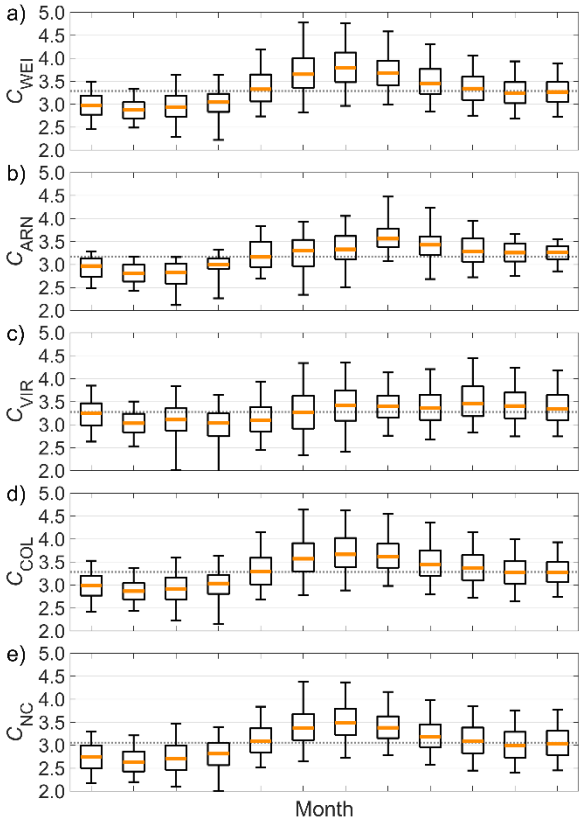

Figure S2: The monthly statistics of the C_{ref} for different correction algorithms. The orange line in the middle represents the monthly median, the edges of the boxes are the 25th and 75th percentiles and the whiskers are the 5th and 95th percentiles.

S2 The time series of the compensation parameter

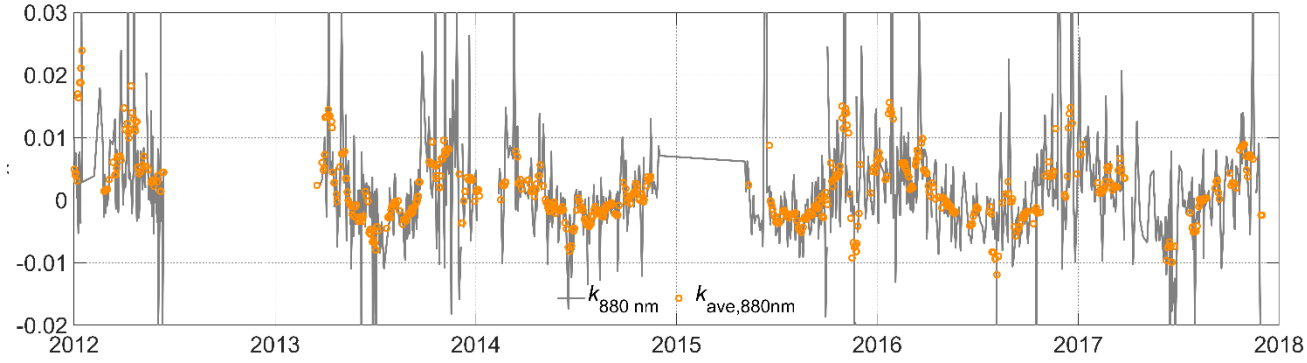

Figure S3: Time series of the compensation parameter (*k*) at 880 nm. The figure is presented for both "raw" *k* values and the averaged ones.