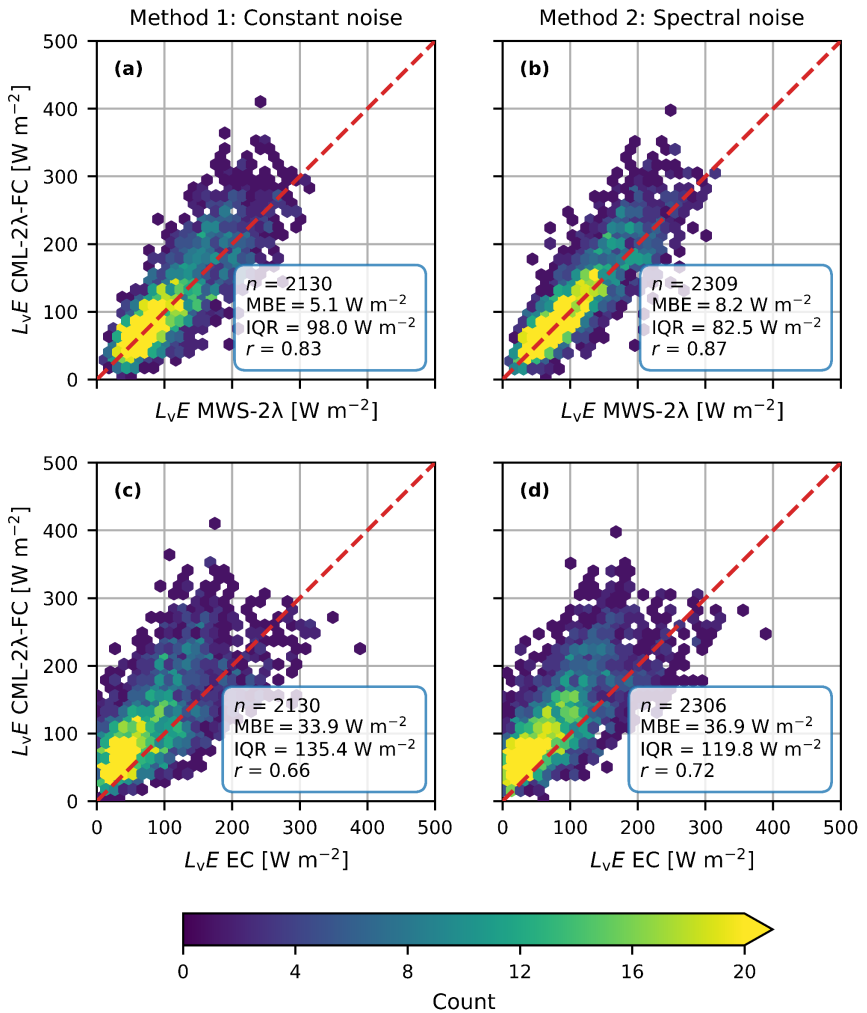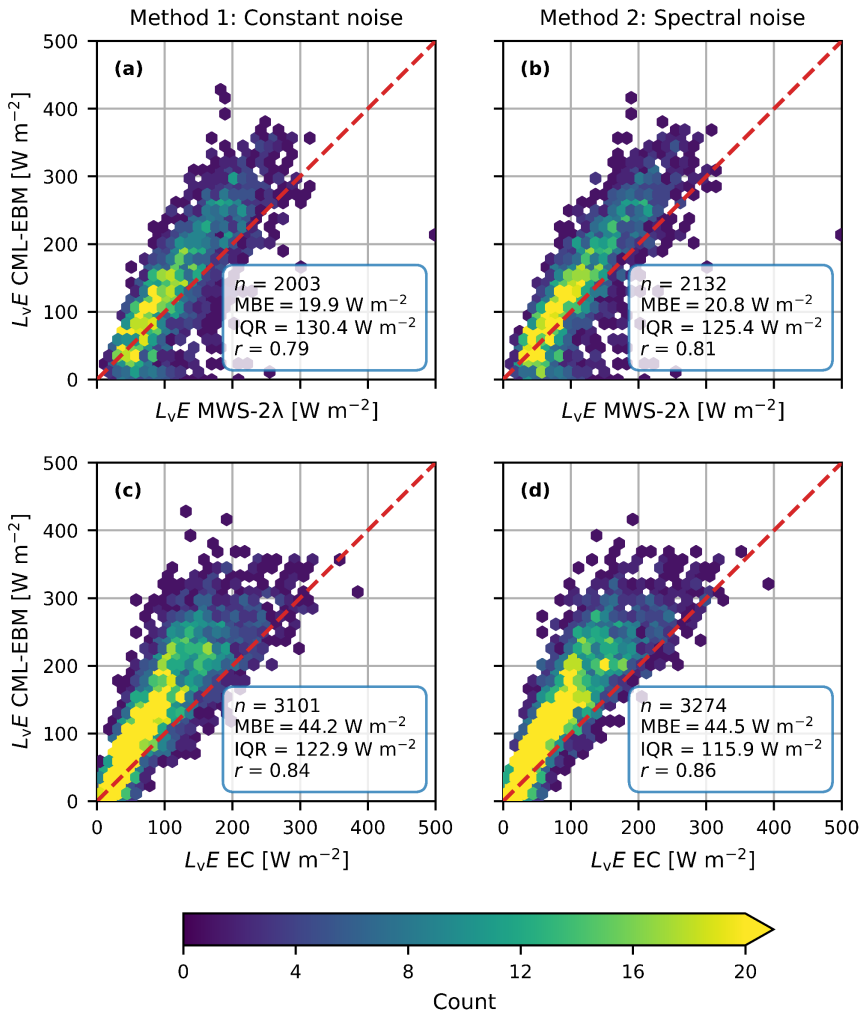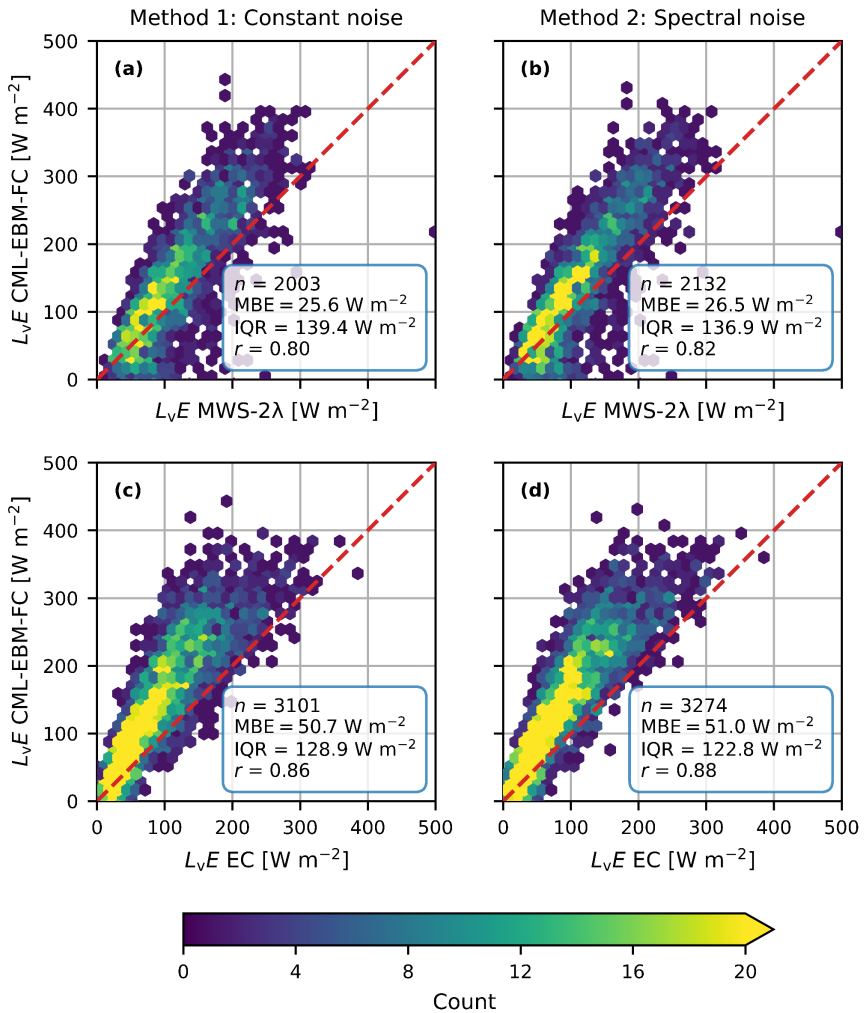**Fig S1**. 30-min L_vE estimates obtained with the Nokia CML using the two-wavelength method together with the complete scaling for the entire study period, post-processed with the constant noise correction method (a and c) and spectral noise correction method (b and d) versus the MWS-LAS (a and b) and the EC (c and d) estimates. The dashed red line is the 1:1 line.

Fig S2. 30-min L_vE estimates obtained with the Nokia CML using the two-wavelength method together with the free-convection scaling for the entire study period, post-processed with the constant noise correction method (a and c) and spectral noise correction method (b and d) versus the MWS-LAS (a and b) and the EC (c and d) estimates. The dashed red line is the 1:1 line.

Fig S3. 30-min L_vE estimates obtained with the Nokia CML using the energy-balance method together with the complete scaling for the entire study period, post-processed with the constant noise correction method (a and c) and spectral noise correction method (b and d) versus the MWS-LAS (a and b) and the EC (c and d) estimates. The dashed red line is the 1:1 line.
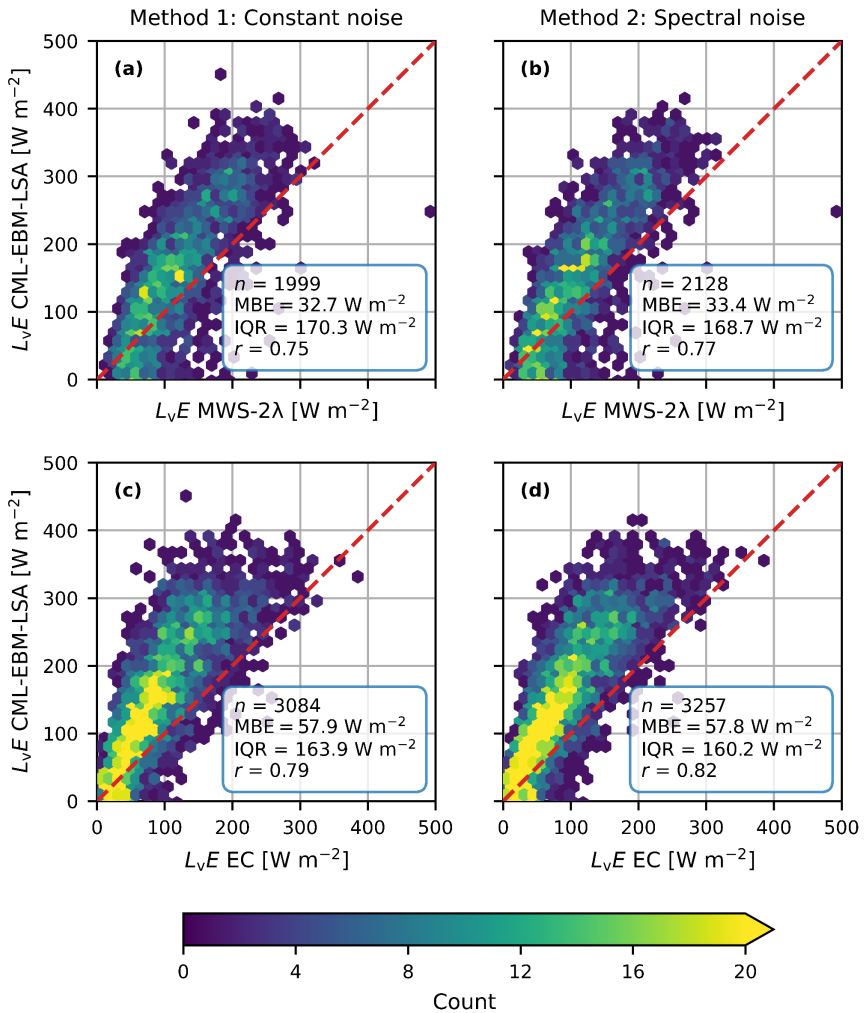
Fig S4. 30-min L_vE estimates obtained with the Nokia CML using the energy-balance method together with the free-convection scaling for the entire study period, post-processed with the constant noise correction method (a and c) and spectral noise correction method (b and d) versus the MWS-LAS (a and b) and the EC (c and d) estimates. The dashed red line is the 1:1 line.
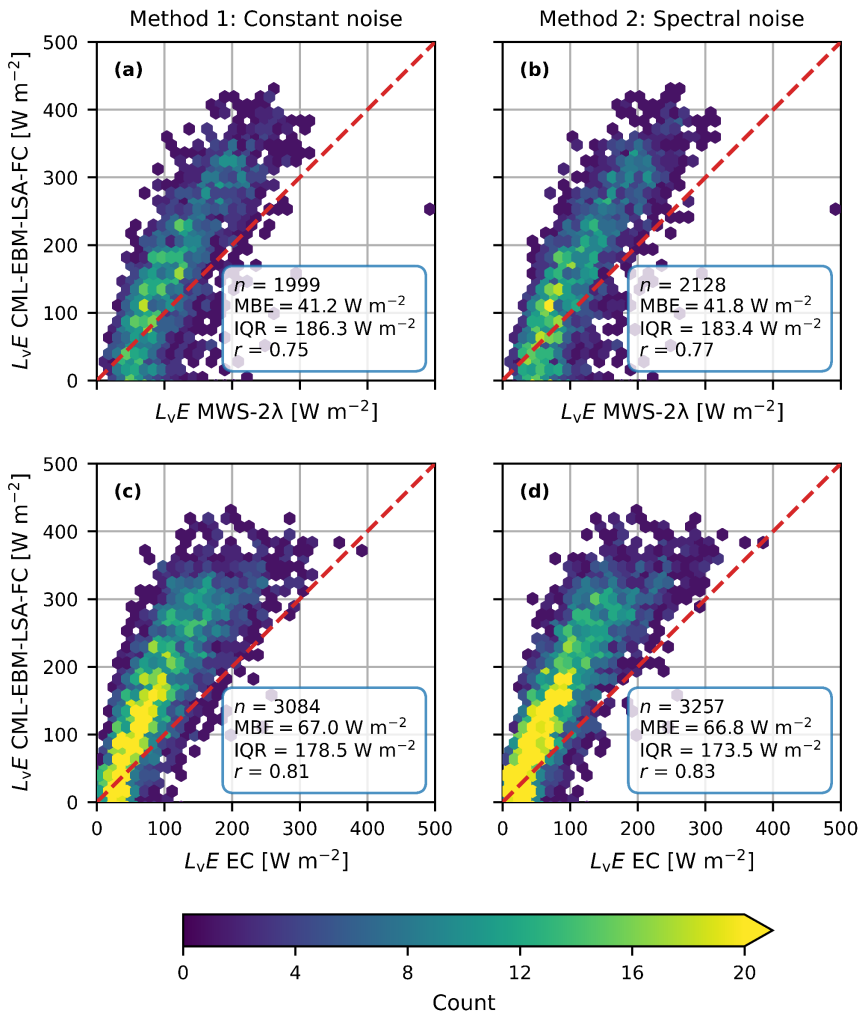
Fig S5. 30-min L_vE estimates obtained with the Nokia CML using the energy-balance method based on LSA SAF radiation estimates together with the complete scaling for the entire study period, post-processed with the constant noise correction method (a and c) and spectral noise correction method (b and d) versus the MWS-LAS (a and b) and the EC (c and d) estimates. The dashed red line is the 1:1 line.
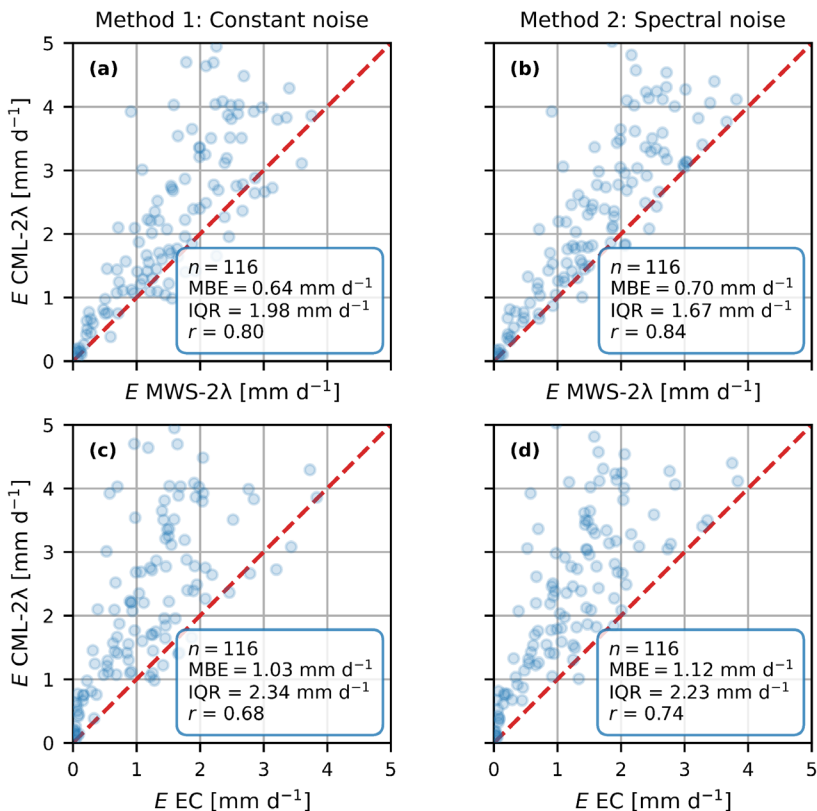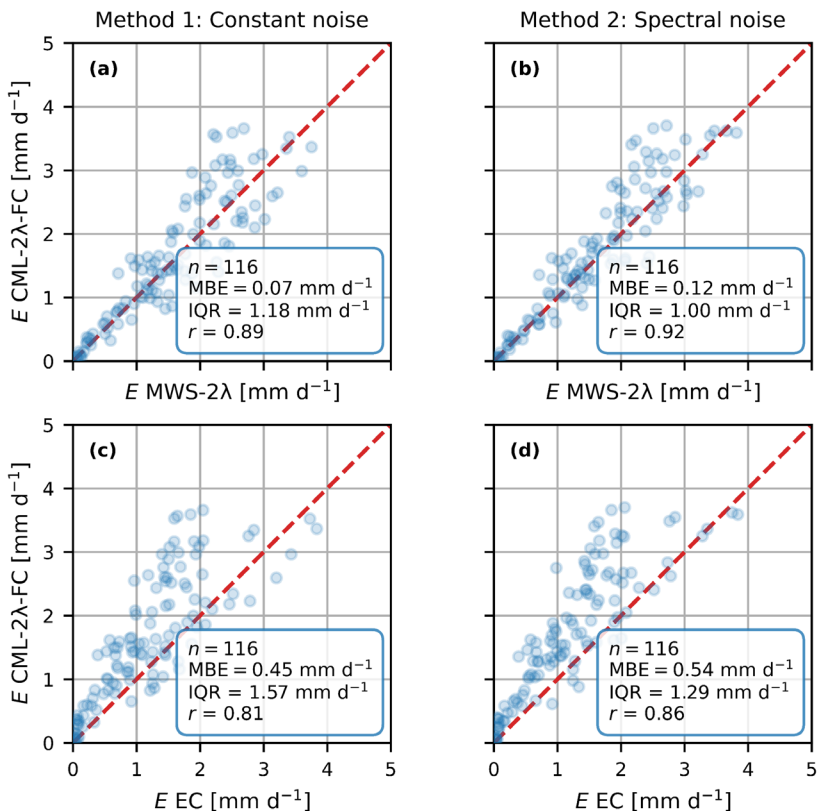
Fig S6. 30-min L_vE estimates obtained with the Nokia CML using the energy-balance method based on LSA SAF radiation estimates together with the free-convection scaling for the entire study period, post-processed with the constant noise correction method (a and c) and spectral noise correction method (b and d) versus the MWS-LAS (a and b) and the EC (c and d) estimates. The dashed red line is the 1:1 line.
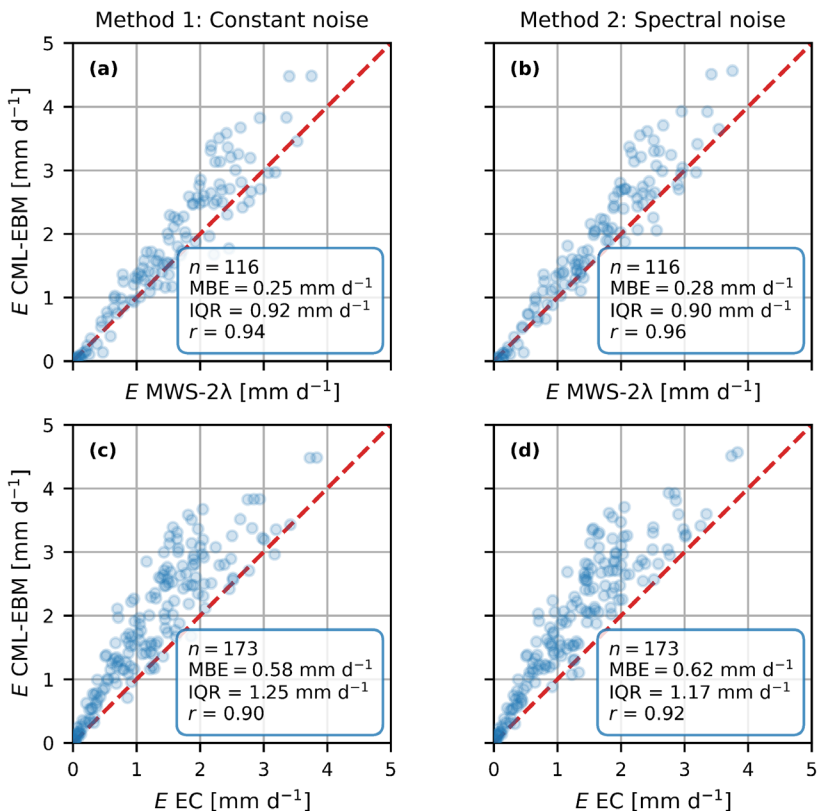
Fig S7. Daily E estimates obtained with the Nokia CML using the two-wavelength method together with the complete scaling for the entire study period, post-processed with the constant noise correction method (a and c) and spectral noise correction method (b and d) versus the MWS-LAS (a and b) and the EC (c and d) estimates. The dashed red line is the 1:1 line.
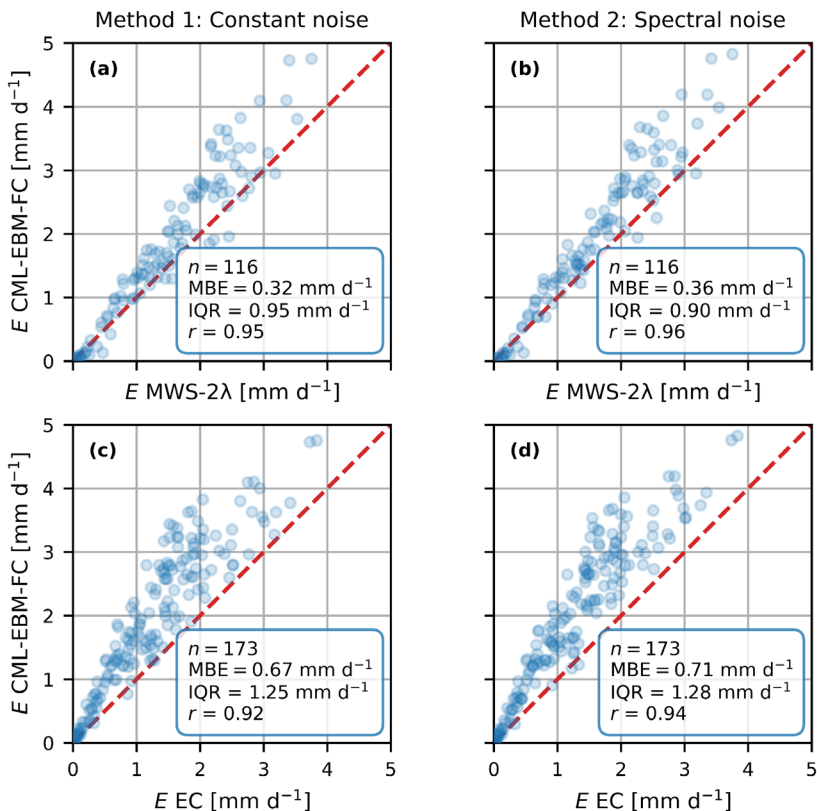
Fig S8. Daily E estimates obtained with the Nokia CML using the two-wavelength method together with the free-convection scaling for the entire study period, post-processed with the constant noise correction method (a and c) and spectral noise correction method (b and d) versus the MWS-LAS (a and b) and the EC (c and d) estimates. The dashed red line is the 1:1 line.
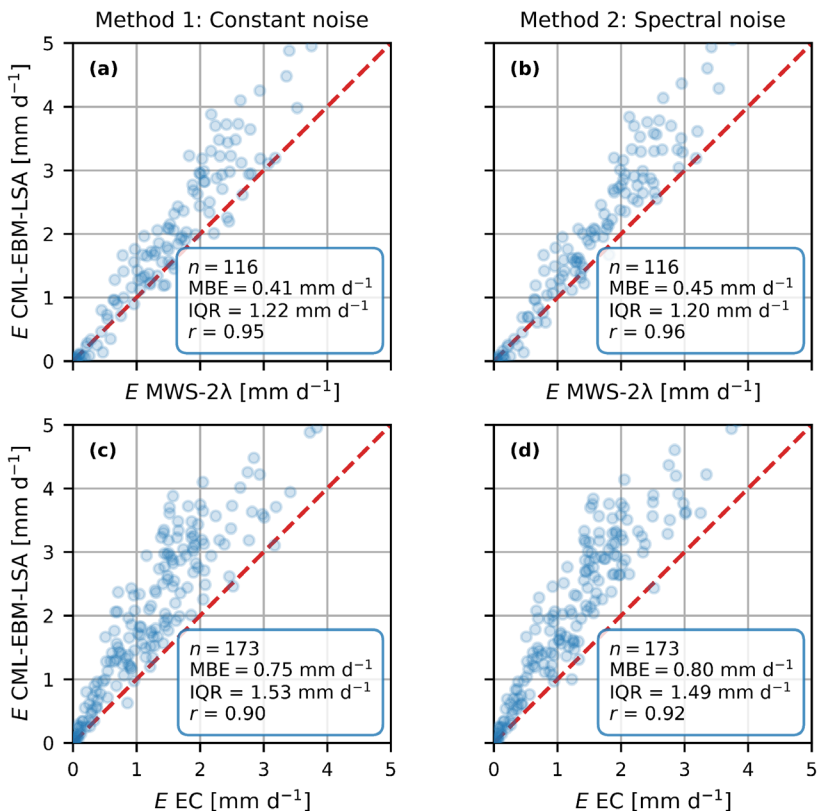
Fig S9. Daily E estimates obtained with the Nokia CML using the energy-balance method together with the complete scaling for the entire study period, post-processed with the constant noise correction method (a and c) and spectral noise correction method (b and d) versus the MWS-LAS (a and b) and the EC (c and d) estimates. The dashed red line is the 1:1 line.
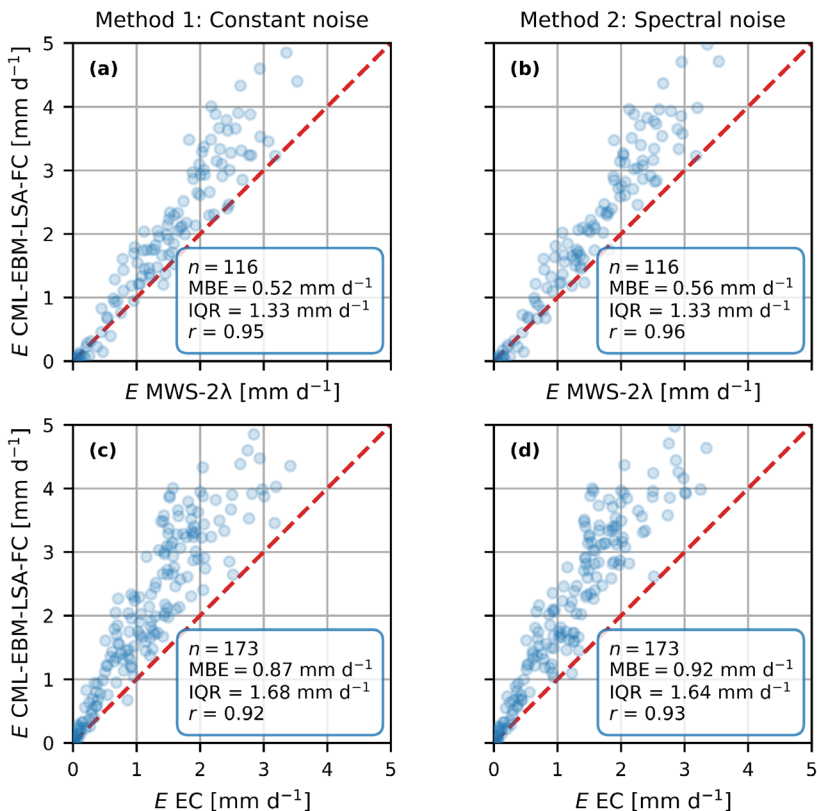
Fig S10. Daily E estimates obtained with the Nokia CML using the energy-balance method together with the free-convection scaling for the entire study period, post-processed with the constant noise correction method (a and c) and spectral noise correction method (b and d) versus the MWS-LAS (a and b) and the EC (c and d) estimates. The dashed red line is the 1:1 line.

Fig S11. Daily E estimates obtained with the Nokia CML using the energy-balance method based on LSA SAF radiation estimates together with the complete scaling for the entire study period, post-processed with the constant noise correction method (a and c) and spectral noise correction method (b and d) versus the MWS-LAS (a and b) and the EC (c and d) estimates. The dashed red line is the 1:1 line.
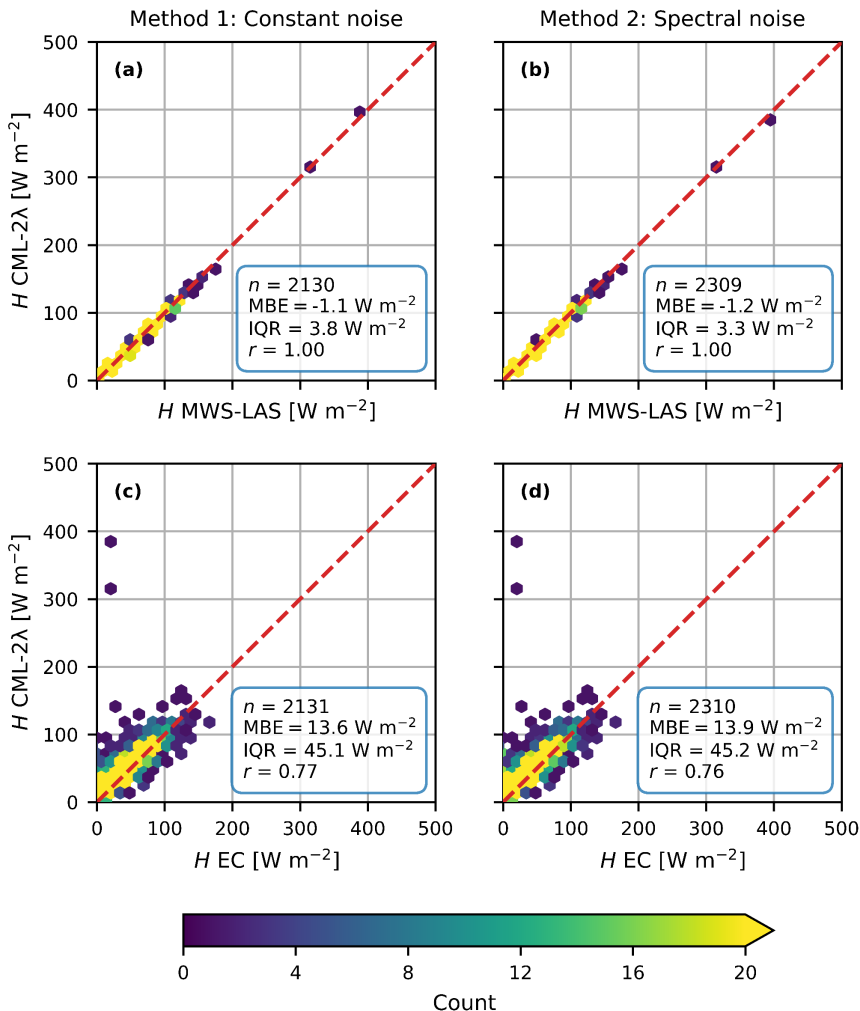
Fig S12. Daily E estimates obtained with the Nokia CML using the energy-balance method based on LSA SAF radiation estimates together with the free-convection scaling for the entire study period, post-processed with the constant noise correction method (a and c) and spectral noise correction method (b and d) versus the MWS-LAS (a and b) and the EC (c and d) estimates. The dashed red line is the 1:1 line.
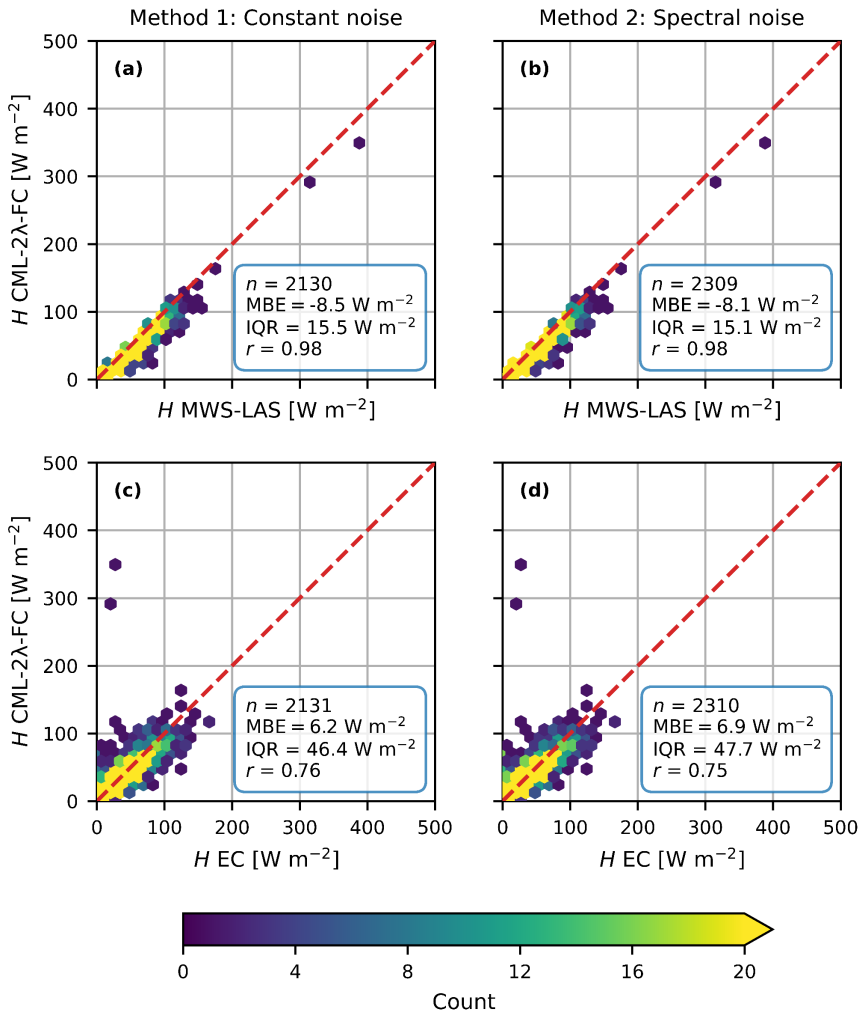
Fig S13. 30-min H estimates obtained with the Nokia CML using the two-wavelength method together with the complete scaling for the entire study period, post-processed with the constant noise correction method (a and c) and spectral noise correction method (b and d) versus the MWS-LAS (a and b) and the EC (c and d) estimates. The dashed red line is the 1:1 line.
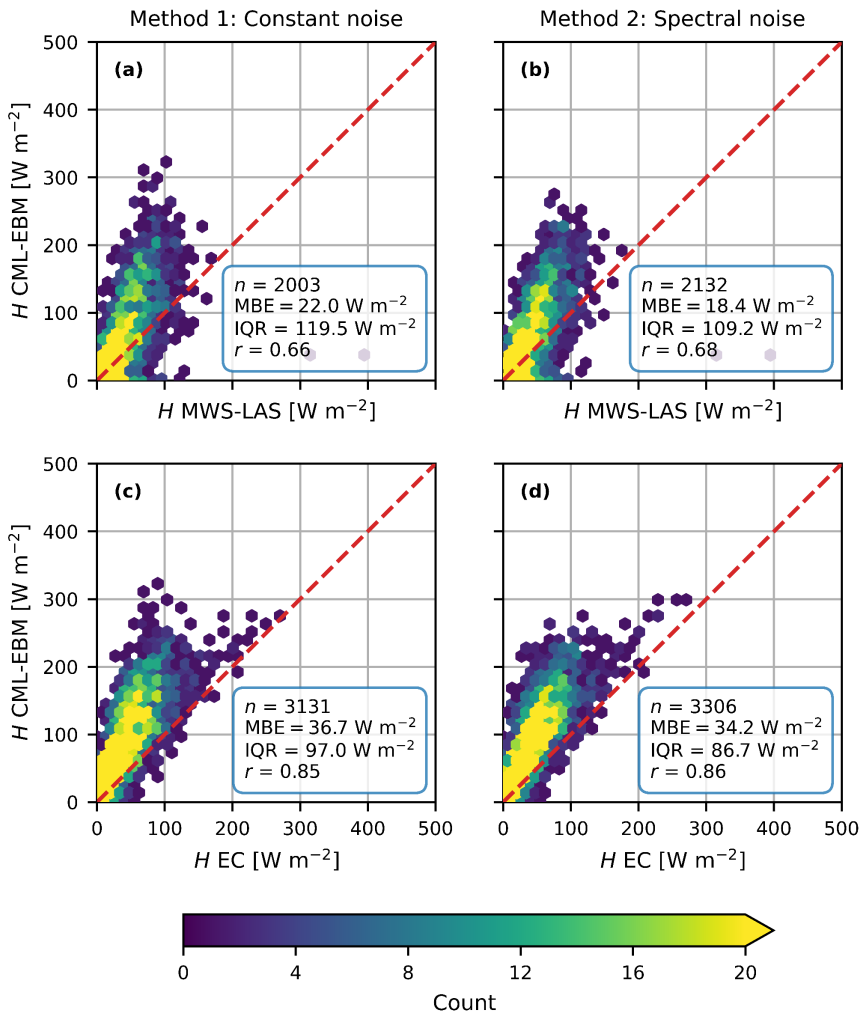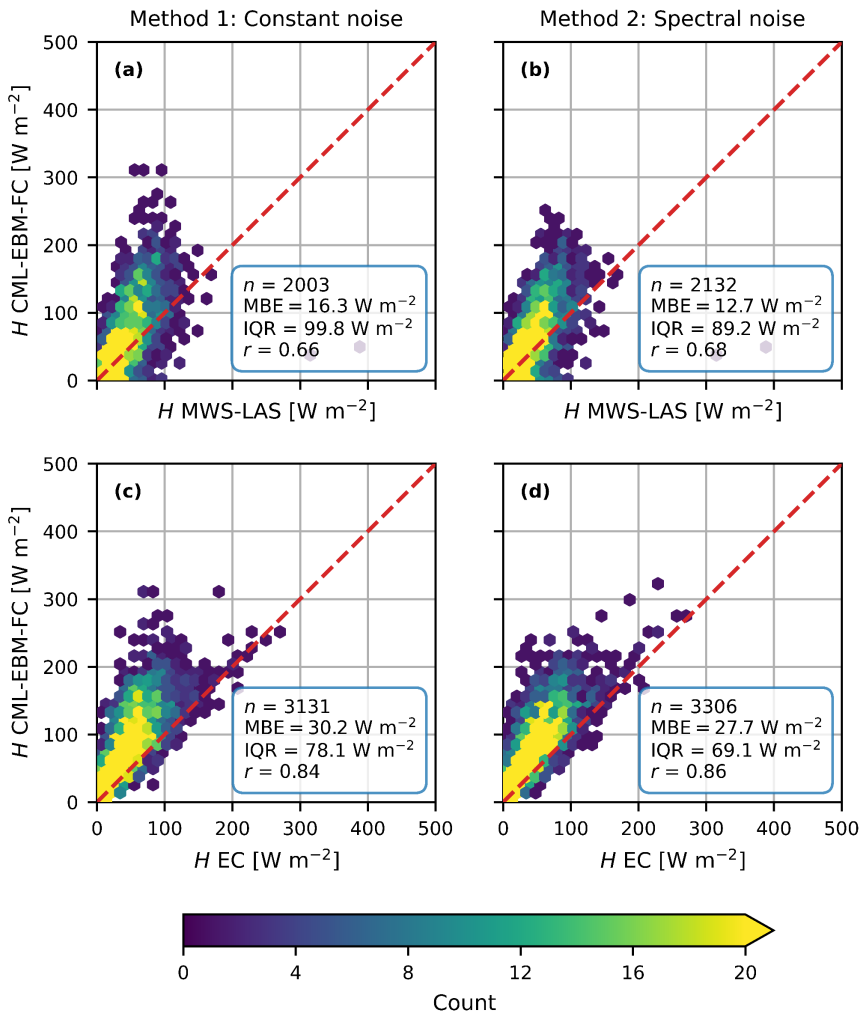
Fig S14. 30-min *H* estimates obtained with the Nokia CML using the two-wavelength method together with the free-convection scaling for the entire study period, post-processed with the constant noise correction method (a and c) and spectral noise correction method (b and d) versus the MWS-LAS (a and b) and the EC (c and d) estimates. The dashed red line is the 1:1 line.
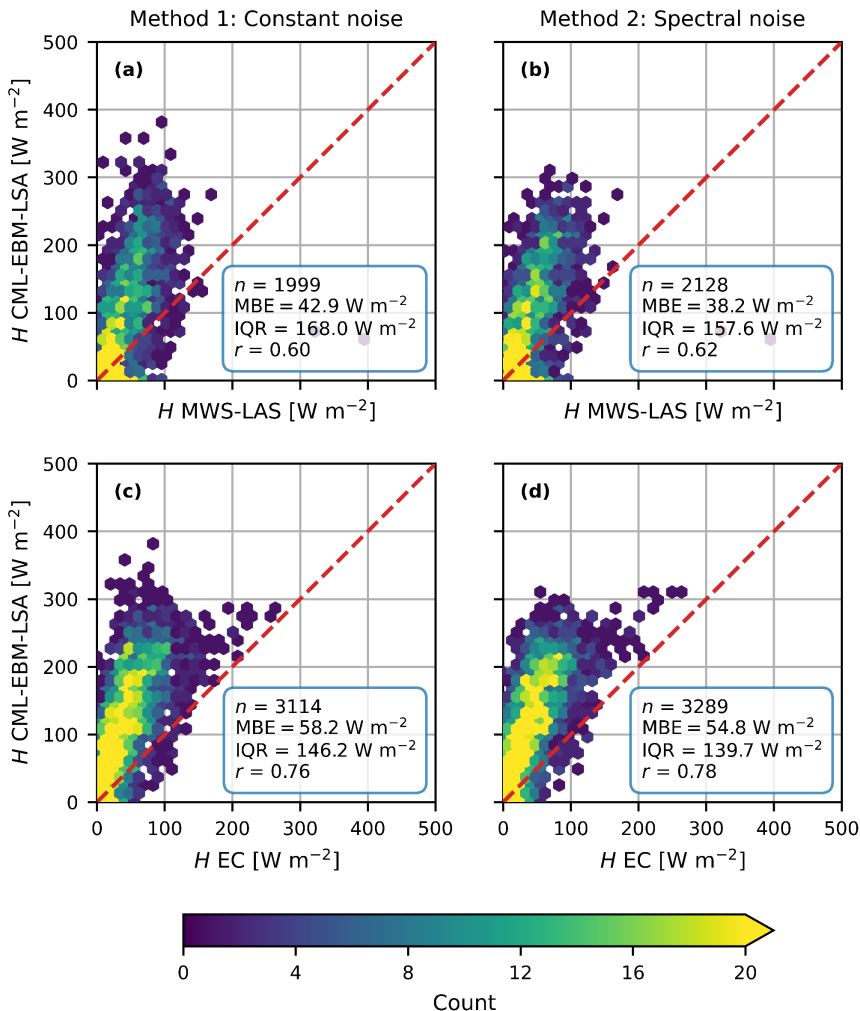
Fig S15. 30-min H estimates obtained with the Nokia CML using the energy-balance method together with the complete scaling for the entire study period, post-processed with the constant noise correction method (a and c) and spectral noise correction method (b and d) versus the MWS-LAS (a and b) and the EC (c and d) estimates. The dashed red line is the 1:1 line.
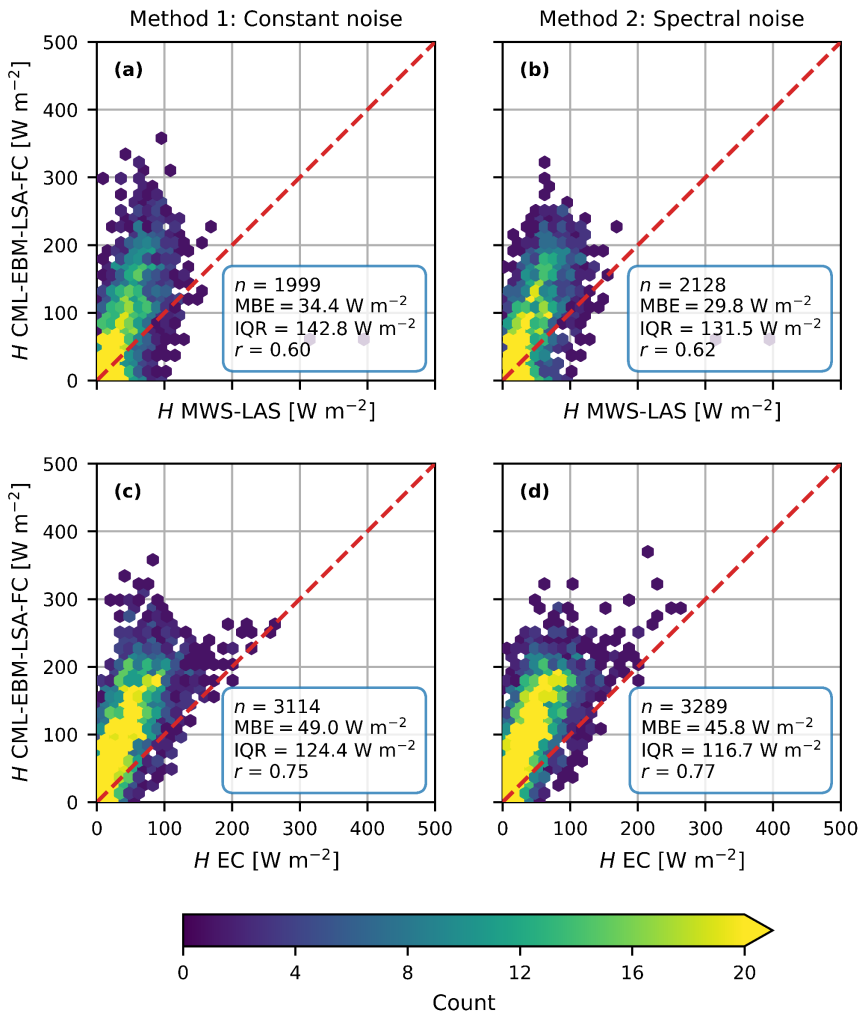
Fig S16. 30-min H estimates obtained with the Nokia CML using the energy-balance method together with the free-convection scaling for the entire study period, post-processed with the constant noise correction method (a and c) and spectral noise correction method (b and d) versus the MWS-LAS (a and b) and the EC (c and d) estimates. The dashed red line is the 1:1 line.

Fig S17. 30-min H estimates obtained with the Nokia CML using the energy-balance method based on LSA SAF radiation estimates together with the complete scaling for the entire study period, post-processed with the constant noise correction method (a and c) and spectral noise correction method (b and d) versus the MWS-LAS (a and b) and the EC (c and d) estimates. The dashed red line is the 1:1 line.

Fig S18. 30-min H estimates obtained with the Nokia CML using the energy-balance method based on LSA SAF radiation estimates together with the free-convection scaling for the entire study period, post-processed with the constant noise correction method (a and c) and spectral noise correction method (b and d) versus the MWS-LAS (a and b) and the EC (c and d) estimates. The dashed red line is the 1:1 line.
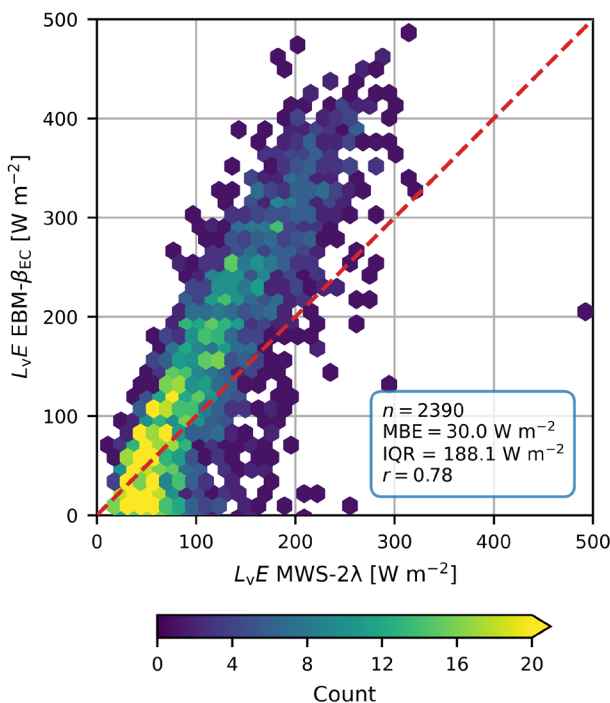
Fig S19. 30-min L_vE estimates obtained using measured available energy (R_{net}-G) and the Bowen ratio obtained from the EC, i.e., (R_{net}-G)/(1+β), versus the MWS-2λ used for Fig. 6. The used Bowen ratio is the median ratio for the full data period (excluding nighttime intervals). The dashed red line is the 1:1 line.
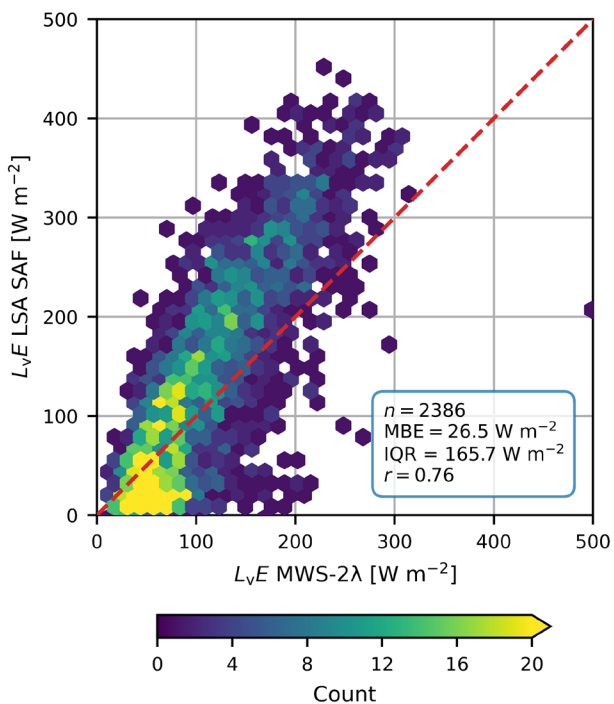
Fig S20. 30-min L_vE estimates directly obtained from LSA SAF versus the MWS-2λ used for Fig. 6. The dashed red line is the 1:1 line.