Supplementary Materials:

Smart Approaches for Evaluating Photosynthetically Active Radiation at Various Stations Based on MSG Prime Satellite Imagery

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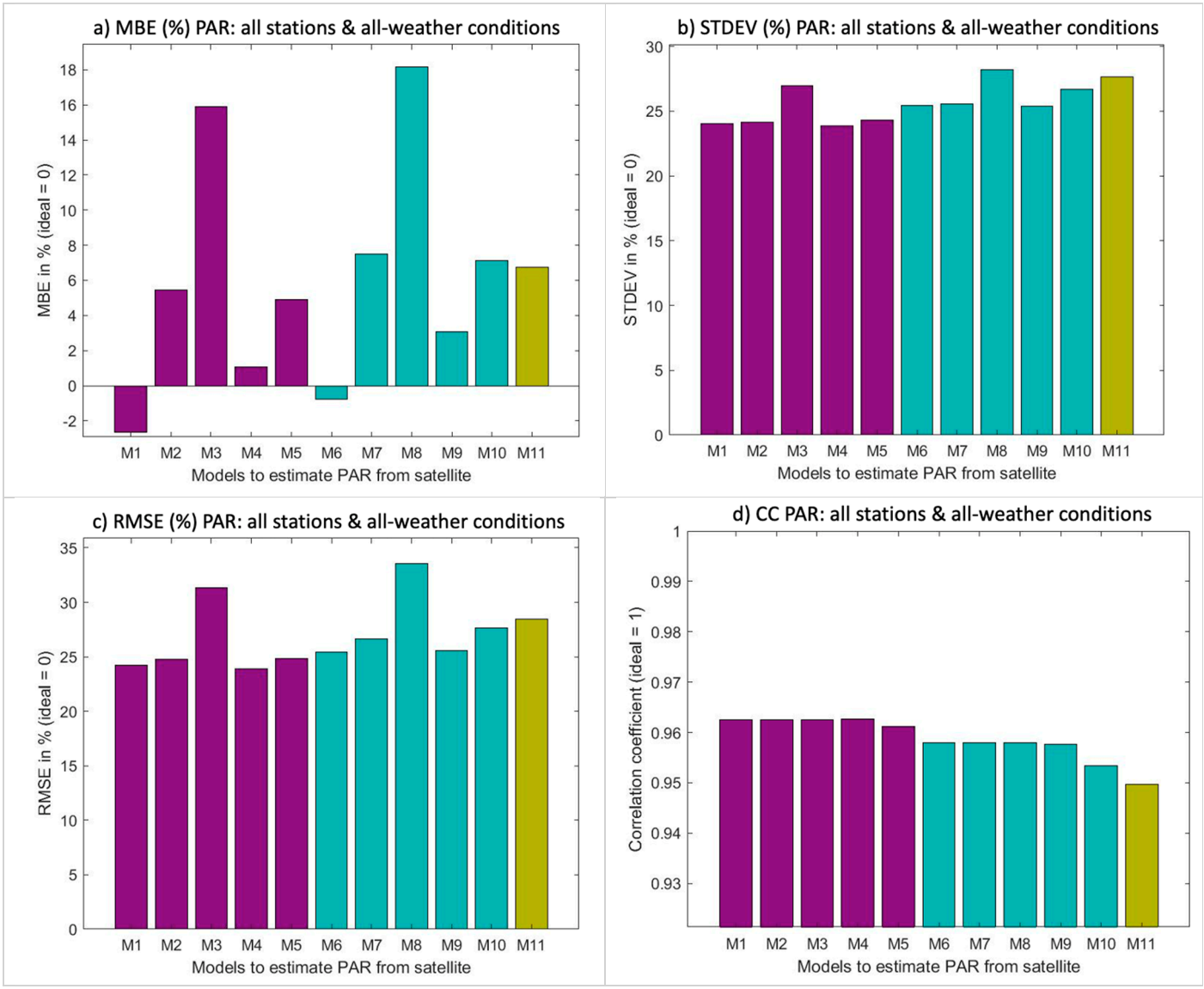


Figure S2. Validation results for group "Central Europe" gathering 6 continental stations and for each method. a) MBE (%); b) STDEV (%); c) RMSE (%); d) CC. The 3 colors depict the SSIs from which methods are computed: from HC3 in purple, from CAMS-Rad in turquoise, and from SARAH-3 in kaki. Methods are M1: Jacovides from HC3, M2: Udo et Aro from HC3, M3: Szeicz from HC3, M4: Weighted_Kato with BB CMF from HC3, M5: Weighted_Kato with PAR CMF from HC3, M6: Jacovides from CAMS-Rad, M7: Udo et Aro from CAMS-Rad, M8: Szeicz from CAMS-Rad, M9: Weighted_Kato with BB CMF from CAMS-Rad, M10: Weighted_Kato with PAR CMF from CAMS-Rad, and M11: DWD SARAH-3.

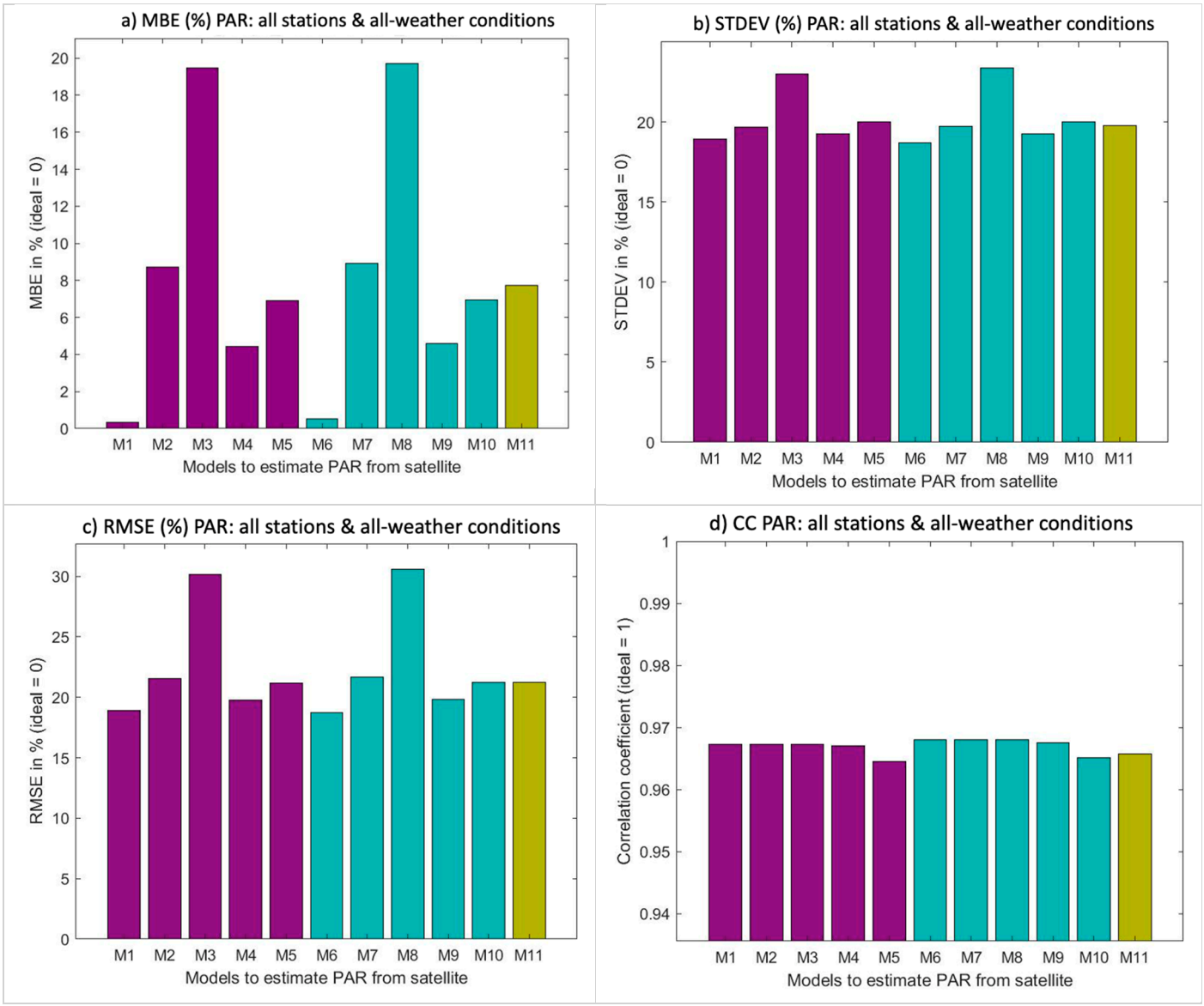


Figure S3: Validation results for group "Mediterranean" gathering 5 stations and for each method. a) MBE (%); b) STDEV (%); c) RMSE (%); d) CC. The 3 colors depict the SSIs from which methods are computed: from HC3 in purple, from CAMS-Rad in turquoise, and from SARAH-3 in kaki. Methods are M1: Jacovides from HC3, M2: Udo et Aro from HC3, M3: Szeicz from HC3, M4: Weighted_Kato with BB CMF from HC3, M5: Weighted_Kato with PAR CMF from HC3, M6: Jacovides from CAMS-Rad, M7: Udo et Aro from CAMS-Rad, M8: Szeicz from CAMS-Rad, M9: Weighted_Kato with BB CMF from CAMS-Rad, M10: Weighted_Kato with PAR CMF from CAMS-Rad, and M11: DWD SARAH-3

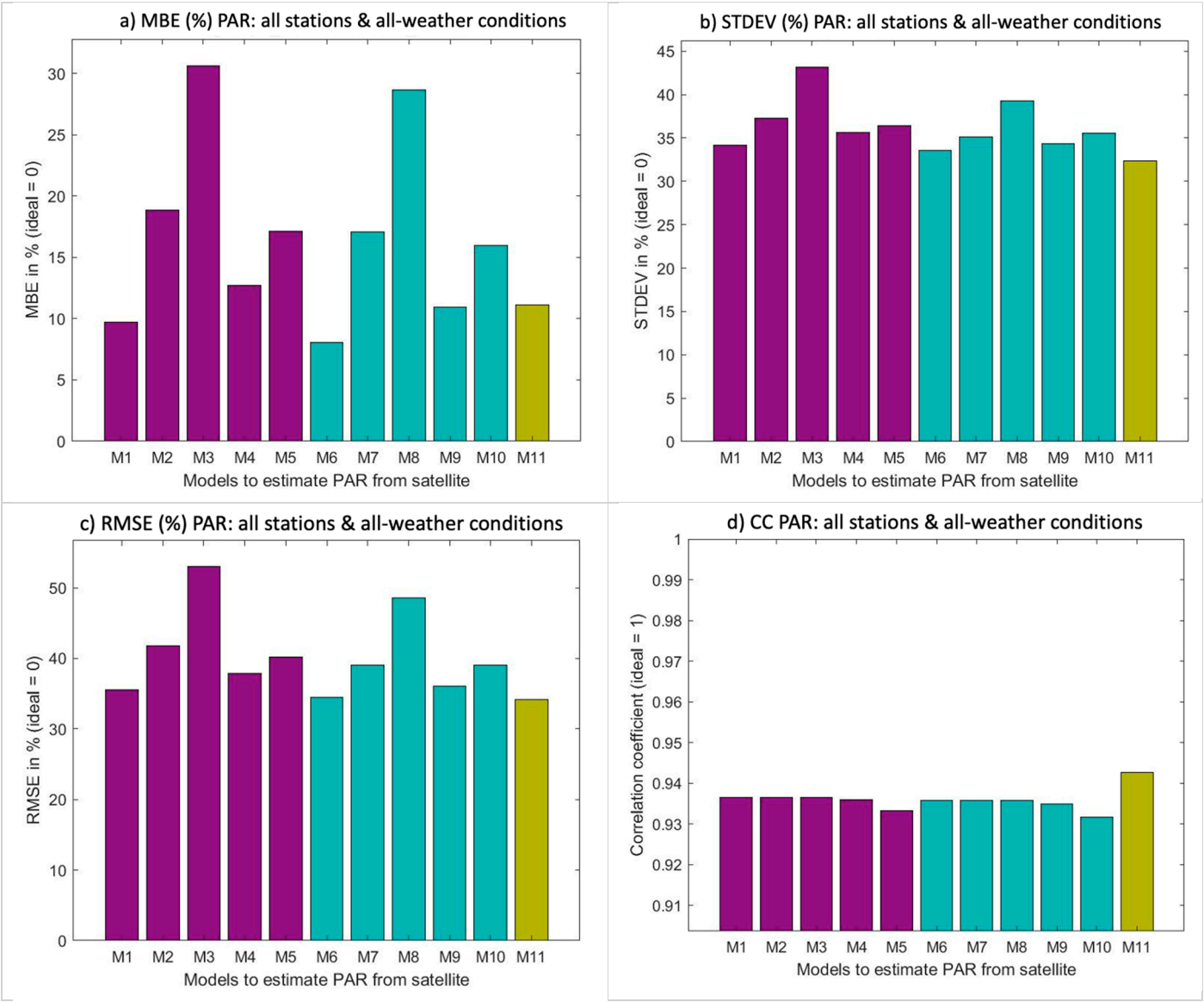


Figure S4: Validation results for group "Eastern Europe" gathering 4 stations located on the eastern part of Europe and for each method. a) MBE (%); b) STDEV (%); c) RMSE (%); d) CC. The 3 colors depict the SSIs from which methods are computed: from HC3 in purple, from CAMS-Rad in turquoise, and from SARAH-3 in kaki. Methods are M1: Jacovides from HC3, M2: Udo et Aro from HC3, M3: Szeicz from HC3, M4: Weighted_Kato with BB CMF from HC3, M5: Weighted_Kato with PAR CMF from HC3, M6: Jacovides from CAMS-Rad, M7: Udo et Aro from CAMS-Rad, M8: Szeicz from CAMS-Rad, M9: Weighted_Kato with BB CMF from CAMS-Rad, M10: Weighted_Kato with PAR CMF from CAMS-Rad, and M11: DWD SARAH-3

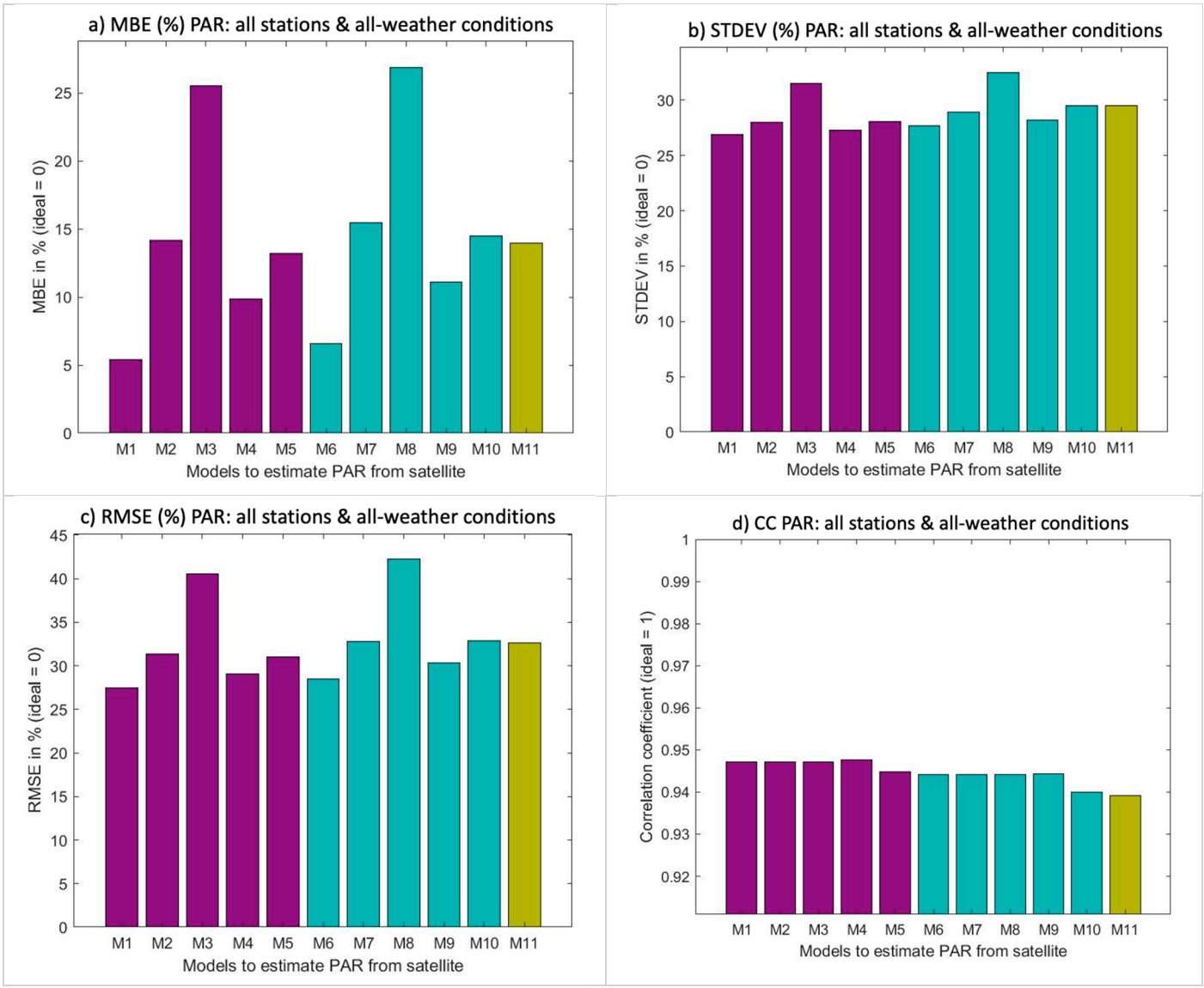


Figure S5: Validation results for group "Central Spain" gathering 3 stations and for each method. a) MBE (%); b) STDEV (%); c) RMSE (%); d) CC. The 3 colors depict the SSIs from which methods are computed: from HC3 in purple, from CAMS-Rad in turquoise, and from SARAH-3 in kaki. Methods are M1: Jacovides from HC3, M2: Udo et Aro from HC3, M3: Szeicz from HC3, M4: Weighted_Kato with BB CMF from HC3, M5: Weighted_Kato with PAR CMF from HC3, M6: Jacovides from CAMS-Rad, M7: Udo et Aro from CAMS-Rad, M8: Szeicz from CAMS-Rad, M9: Weighted_Kato with BB CMF from CAMS-Rad, M10: Weighted_Kato with PAR CMF from CAMS-Rad, and M11: DWD SARAH-3

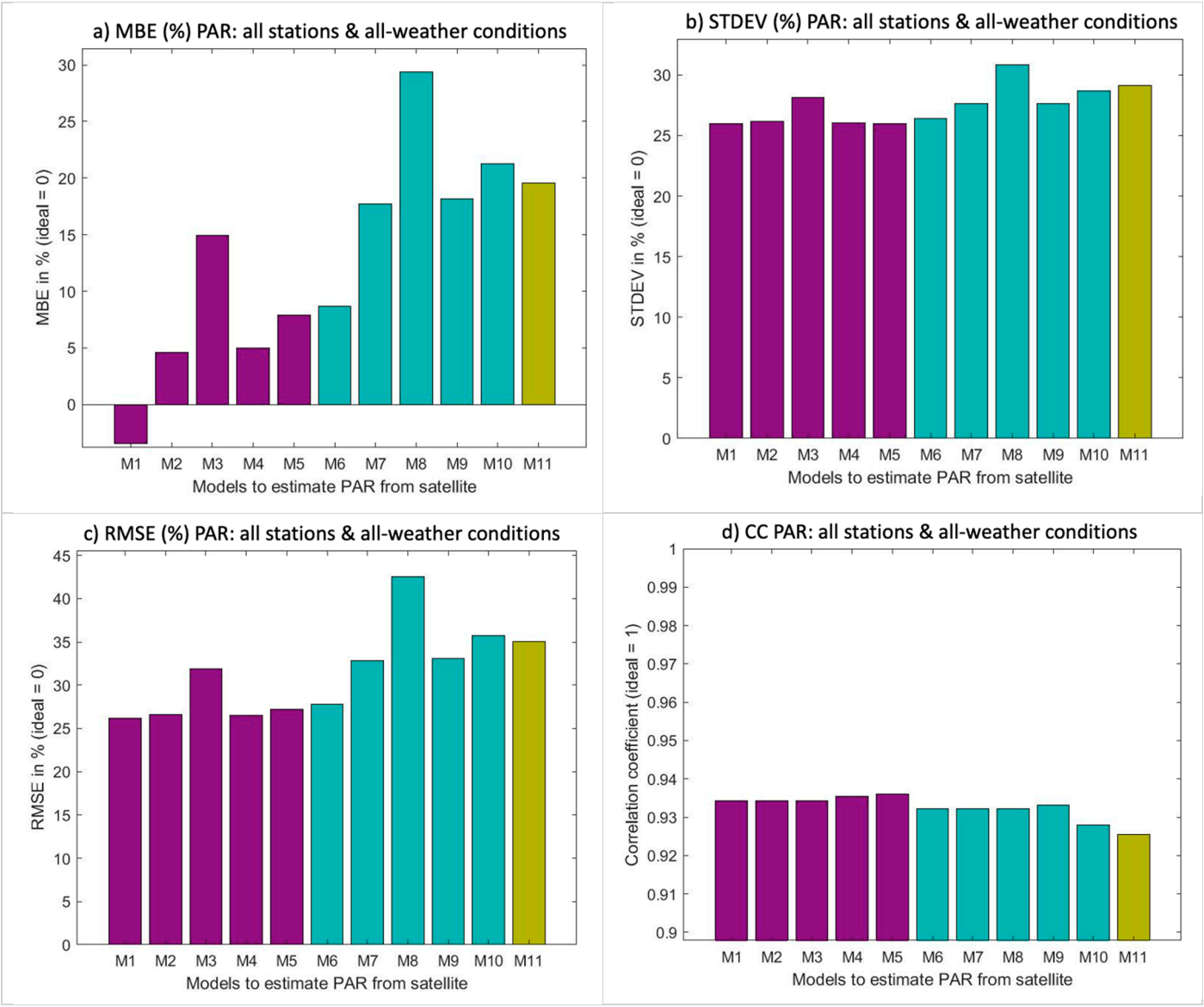


Figure S6: Validation results for Congo composed of a single station of Pokola and for each method. a) MBE (%); b) STDEV (%); c) RMSE (%); d) CC. The 3 colors depict the SSIs from which methods are computed: from HC3 in purple, from CAMS-Rad in turquoise, and from SARAH-3 in kaki. Methods are M1: Jacovides from HC3, M2: Udo et Aro from HC3, M3: Szeicz from HC3, M4: Weighted_Kato with BB CMF from HC3, M5: Weighted_Kato with PAR CMF from HC3, M6: Jacovides from CAMS-Rad, M7: Udo et Aro from CAMS-Rad, M8: Szeicz from CAMS-Rad, M9: Weighted_Kato with BB CMF from CAMS-Rad, M10: Weighted_Kato with PAR CMF from CAMS-Rad, and M11: DWD SARAH-3

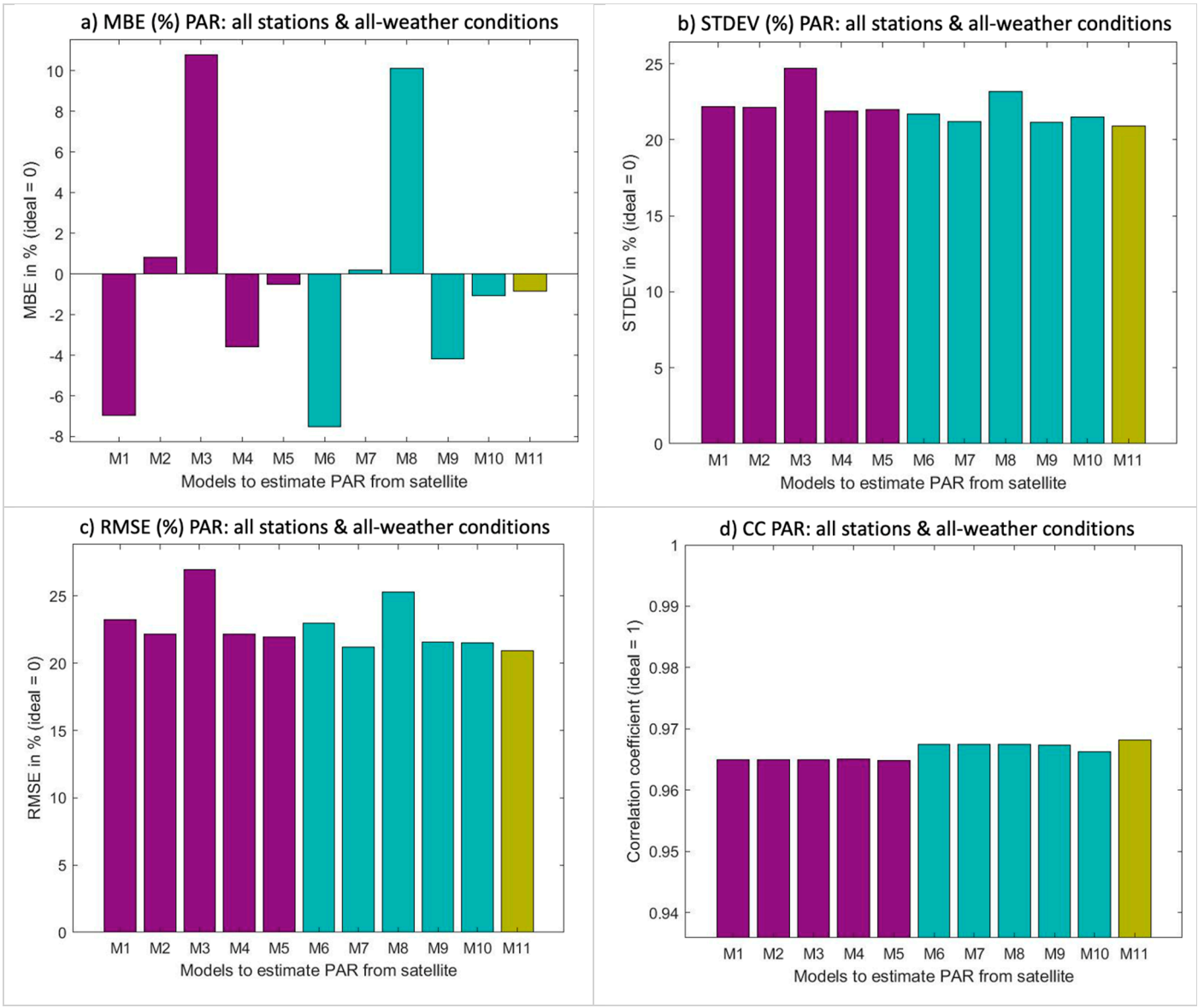


Figure S7: Validation results for Moldova composed of a single station of Kishinev and for each method. a) MBE (%); b) STDEV (%); c) RMSE (%); d) CC. The 3 colors depict the SSIs from which methods are computed: from HC3 in purple, from CAMS-Rad in turquoise, and from SARAH-3 in kaki. Methods are M1: Jacovides from HC3, M2: Udo et Aro from HC3, M3: Szeicz from HC3, M4: Weighted_Kato with BB CMF from HC3, M5: Weighted_Kato with PAR CMF from HC3, M6: Jacovides from CAMS-Rad, M7: Udo et Aro from CAMS-Rad, M8: Szeicz from CAMS-Rad, M9: Weighted_Kato with BB CMF from CAMS-Rad, M10: Weighted_Kato with PAR CMF from CAMS-Rad, and M11: DWD SARAH-3

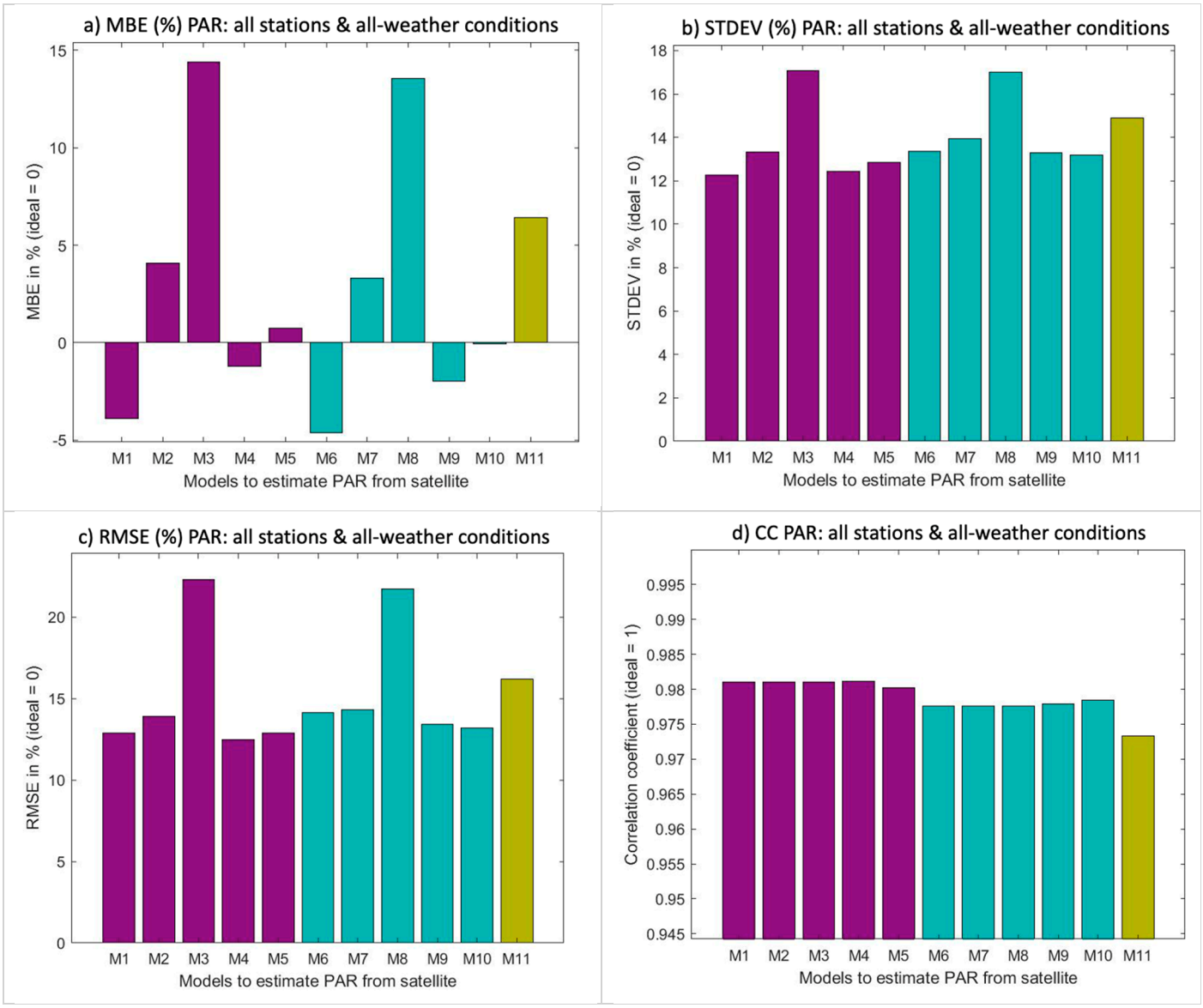


Figure S8: Validation results for Israel composed of a single station of EFDC_IL-Yat and for each method. a) MBE (%); b) STDEV (%); c) RMSE (%); d) CC. The 3 colors depict the SSIs from which methods are computed: from HC3 in purple, from CAMS-Rad in turquoise, and from SARAH-3 in kaki. Methods are M1: Jacovides from HC3, M2: Udo et Aro from HC3, M3: Szeicz from HC3, M4: Weighted_Kato with BB CMF from HC3, M5: Weighted_Kato with PAR CMF from HC3, M6: Jacovides from CAMS-Rad, M7: Udo et Aro from CAMS-Rad, M8: Szeicz from CAMS-Rad, M9: Weighted_Kato with BB CMF from CAMS-Rad, M10: Weighted_Kato with PAR CMF from CAMS-Rad, and M11: DWD SARAH-3

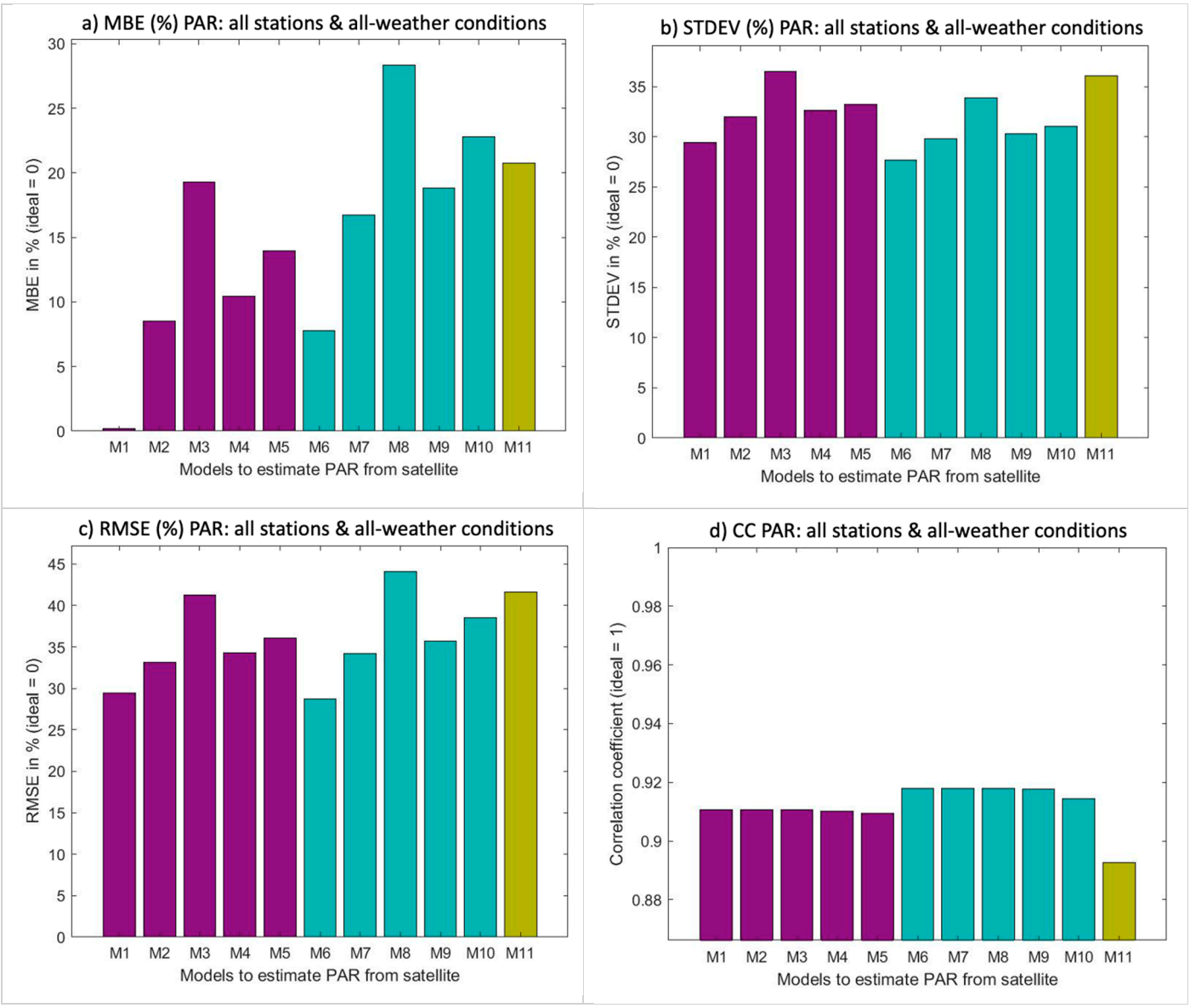


Figure S9: Validation results for French-Guyana composed of a single station of EFDG_GF-Guy and for each method. a) MBE (%); b) STDEV (%); c) RMSE (%); d) CC. The 3 colors depict the SSIs from which methods are computed: from HC3 in purple, from CAMS-Rad in turquoise, and from SARAH-3 in kaki. Methods are M1: Jacovides from HC3, M2: Udo et Aro from HC3, M3: Szeicz from HC3, M4: Weighted_Kato with BB CMF from HC3, M5: Weighted_Kato with PAR CMF from HC3, M6: Jacovides from CAMS-Rad, M7: Udo et Aro from CAMS-Rad, M8: Szeicz from CAMS-Rad, M9: Weighted_Kato with BB CMF from CAMS-Rad, M10: Weighted_Kato with PAR CMF from CAMS-Rad, and M11: DWD SARAH-3

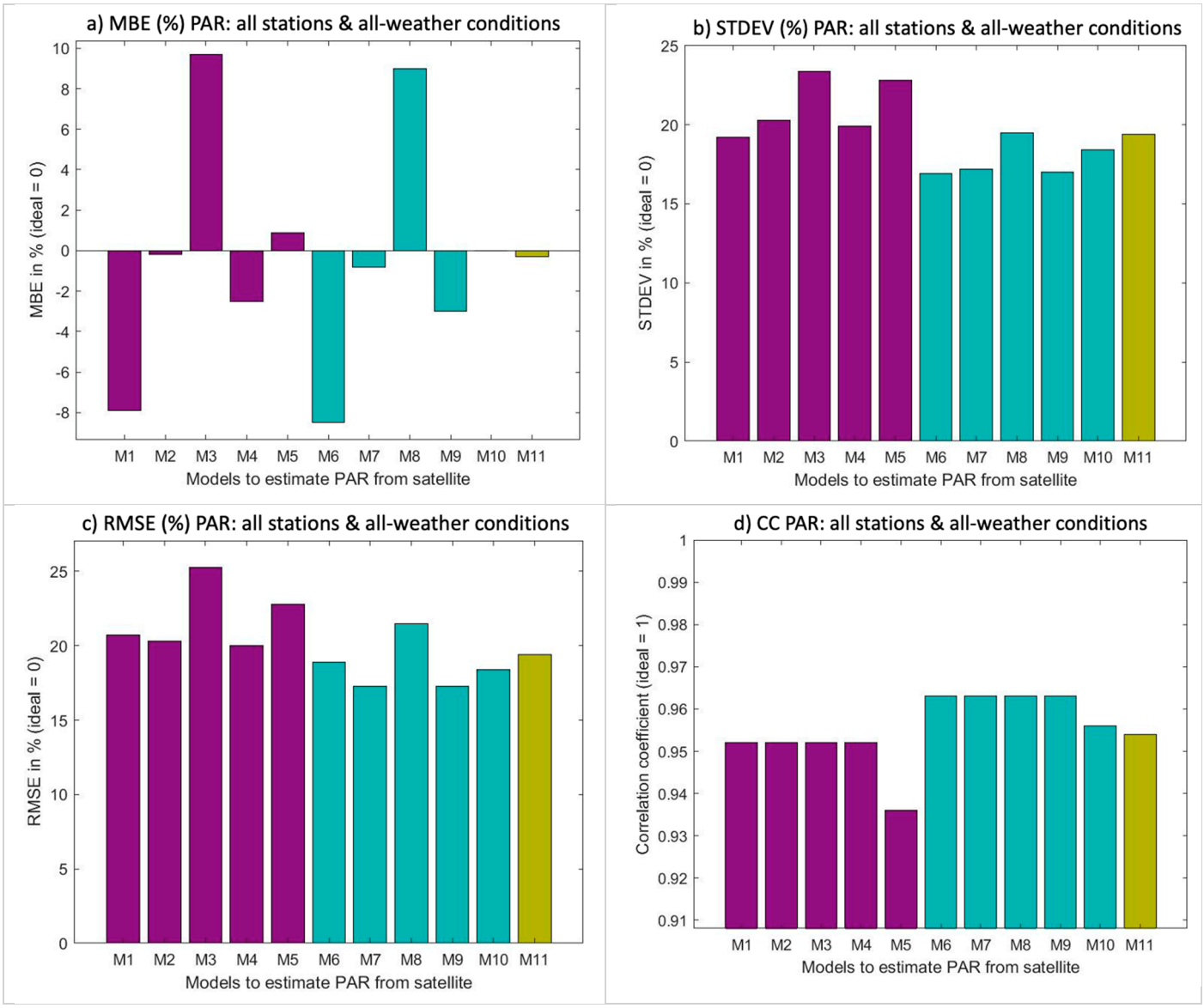


Figure S10: Validation results for Uruguay composed of a single station located nearby the city of Concordia and for each method. a) MBE (%); b) STDEV (%); c) RMSE (%); d) CC. The 3 colors depict the SSIs from which methods are computed: from HC3 in purple, from CAMS-Rad in turquoise, and from SARAH-3 in kaki. Methods are M1: Jacovides from HC3, M2: Udo et Aro from HC3, M3: Szeicz from HC3, M4: Weighted_Kato with BB CMF from HC3, M5: Weighted_Kato with PAR CMF from HC3, M6: Jacovides from CAMS-Rad, M7: Udo et Aro from CAMS-Rad, M8: Szeicz from CAMS-Rad, M9: Weighted_Kato with BB CMF from CAMS-Rad, M10: Weighted_Kato with PAR CMF from CAMS-Rad, and M11: DWD SARAH-3

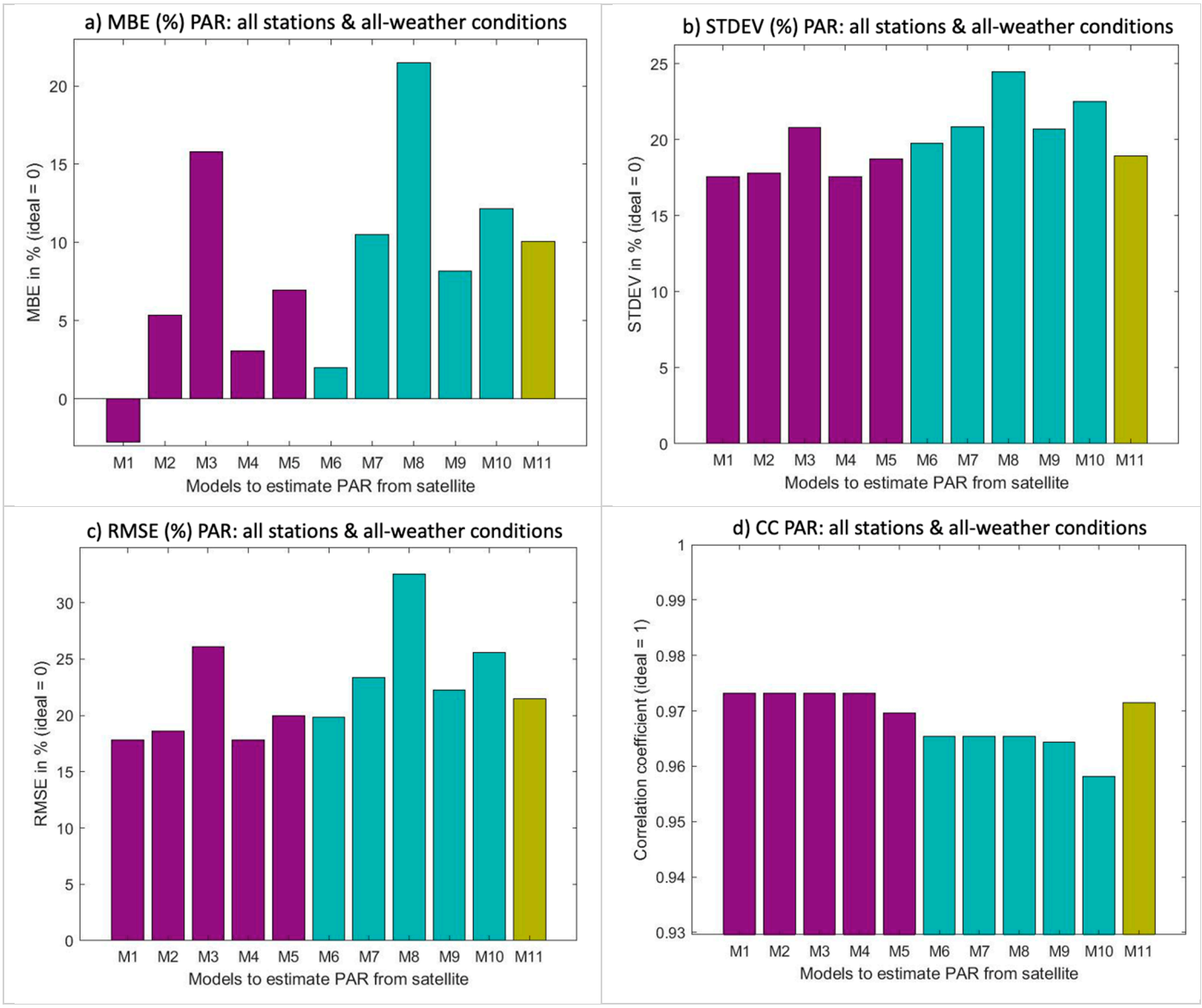


Figure S11: Validation results for group 11 composed of a single station of EFDC_ZA-Kru in the Kruger Park nearby the city of Skukuza and for each method. a) MBE (%); b) STDEV (%); c) RMSE (%); d) CC. The 3 colors depict the SSIs from which methods are computed: from HC3 in purple, from CAMS-Rad in turquoise, and from SARAH-3 in kaki. Methods are M1: Jacovides from HC3, M2: Udo et Aro from HC3, M3: Szeicz from HC3, M4: Weighted_Kato with BB CMF from HC3, M5: Weighted_Kato with PAR CMF from HC3, M6: Jacovides from CAMS-Rad, M7: Udo et Aro from CAMS-Rad, M8: Szeicz from CAMS-Rad, M9: Weighted_Kato with BB CMF from CAMS-Rad, M10: Weighted_Kato with PAR CMF from CAMS-Rad, and M11: DWD SARAH-3

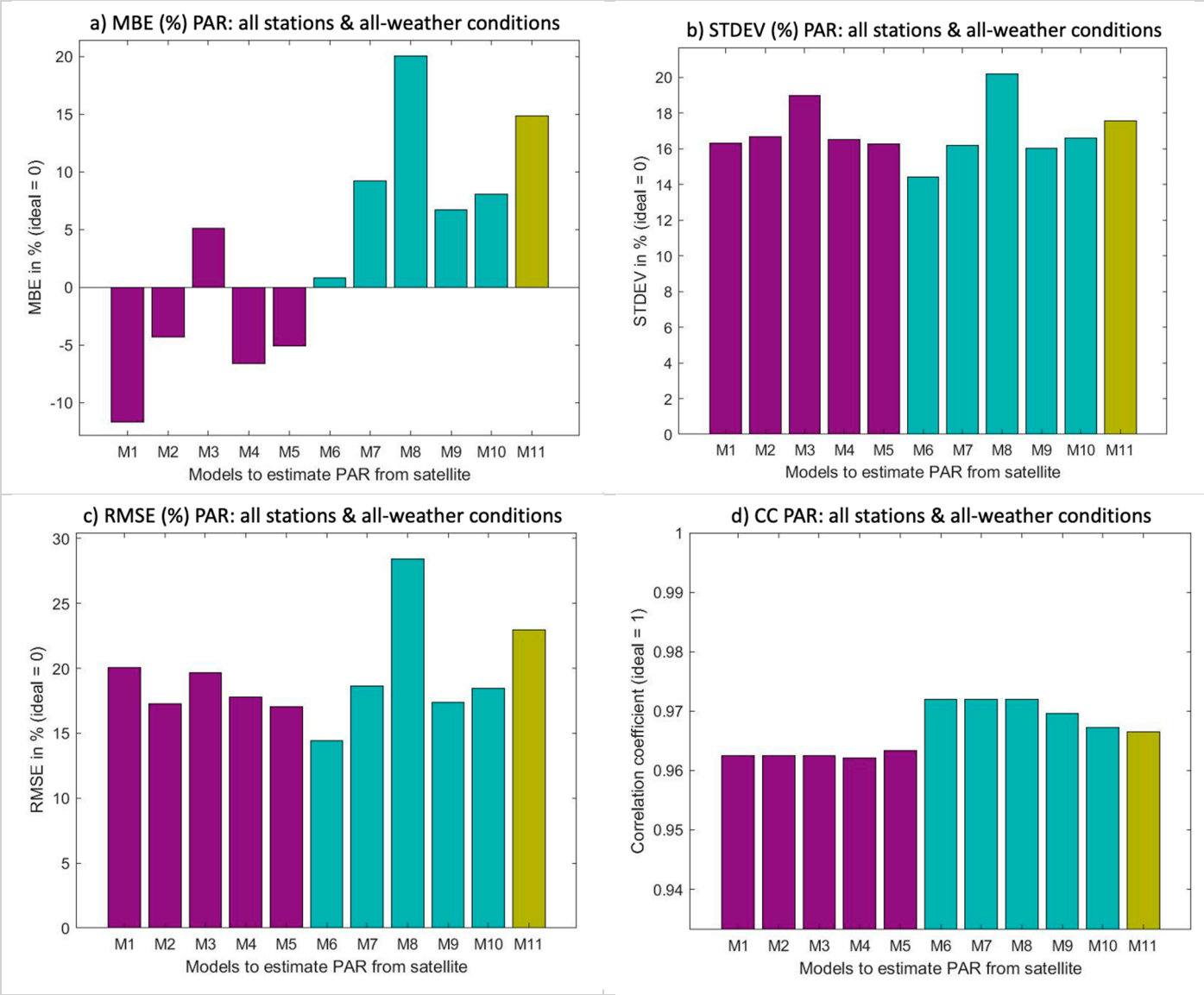


Figure S12: Validation results for Senegal composed of a single station of EFDC_SN-Dhr close to the city of Dahra and for each method. a) MBE (%); b) STDEV (%); c) RMSE (%); d) CC. The 3 colors depict the SSIs from which methods are computed: from HC3 in purple, from CAMS-Rad in turquoise, and from SARAH-3 in kaki. Methods are M1: Jacovides from HC3, M2: Udo et Aro from HC3, M3: Szeicz from HC3, M4: Weighted_Kato with BB CMF from HC3, M5: Weighted_Kato with PAR CMF from HC3, M6: Jacovides from CAMS-Rad, M7: Udo et Aro from CAMS-Rad, M8: Szeicz from CAMS-Rad, M9: Weighted_Kato with BB CMF from CAMS-Rad, M10: Weighted_Kato with PAR CMF from CAMS-Rad, and M11: DWD SARAH-3

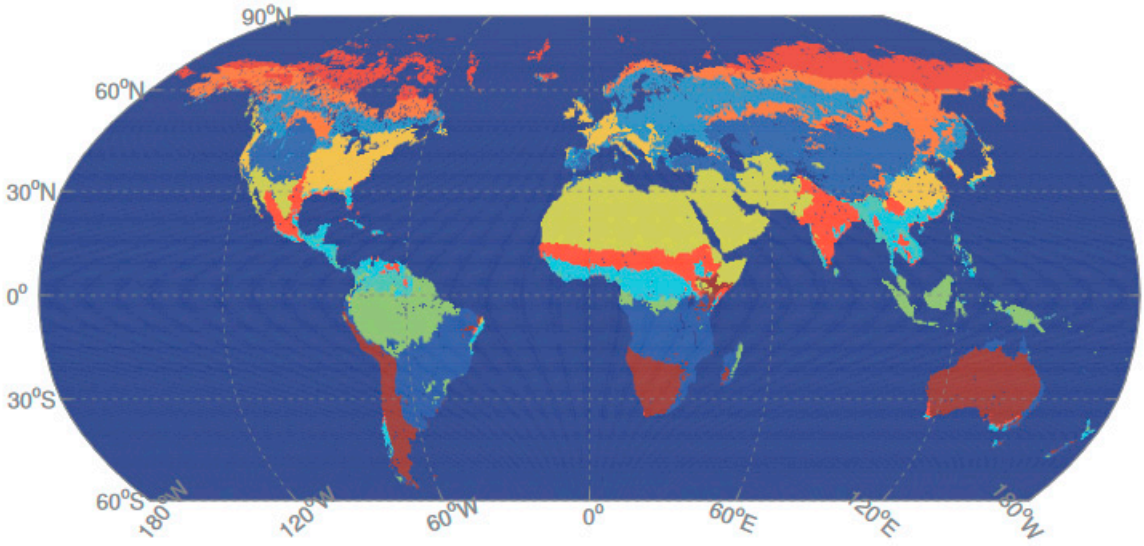
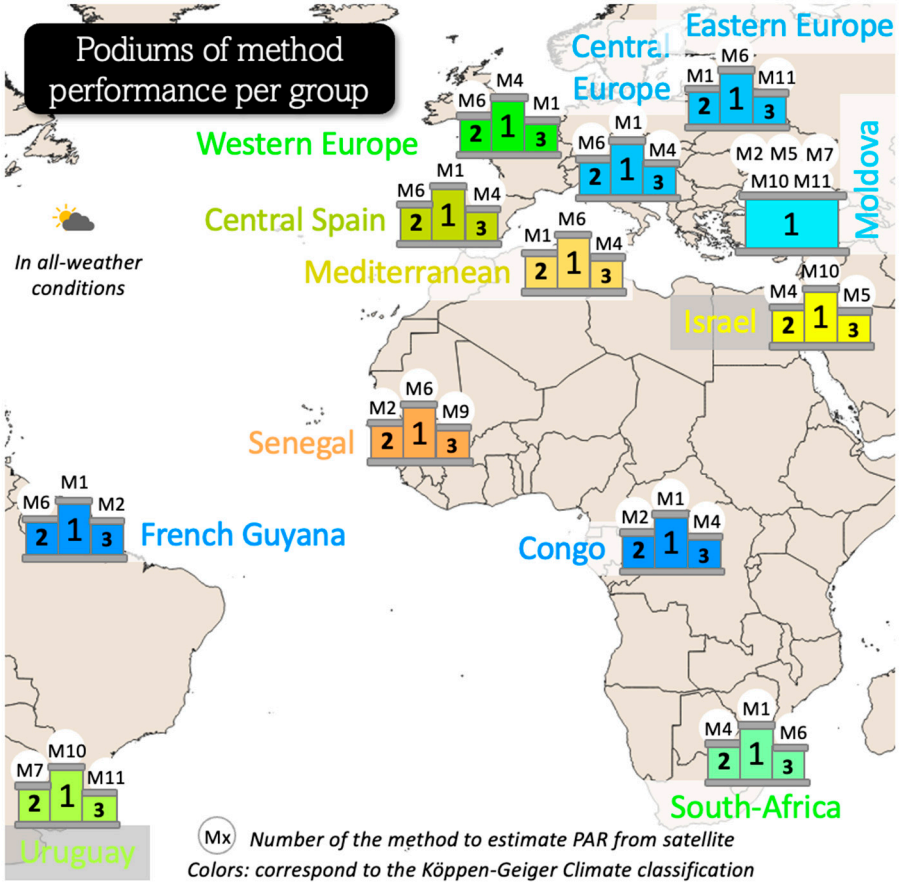


Figure S13: Map of k-means clustering with k=12 based on the variables Precipitation, Temperature, Downward Shortwave Radiation, Enhanced Vegetation Index, and Fraction of Absorbed Photosynthetically Active Radiation (Zscheischler et al. 2012).



M1 Jacovides from HC3
M2 Udo et Aro from HC3
M3 Szeicz from HC3
M4 Weighted_Kato with BB CMF from HC3
M5 Weighted_Kato with PAR CMF from HC3
M6 Jacovides from CAMS-Rad
M7 Udo et Aro from CAMS-Rad
M8 Szeicz from CAMS-Rad
M9 Weighted_Kato with BB CMF from CAMS-Rad
M10 Weighted_Kato with PAR CMF from CAMS-Rad
M11 DWD SARAH-3

Figure S14: Map with the podiums of method performance per group

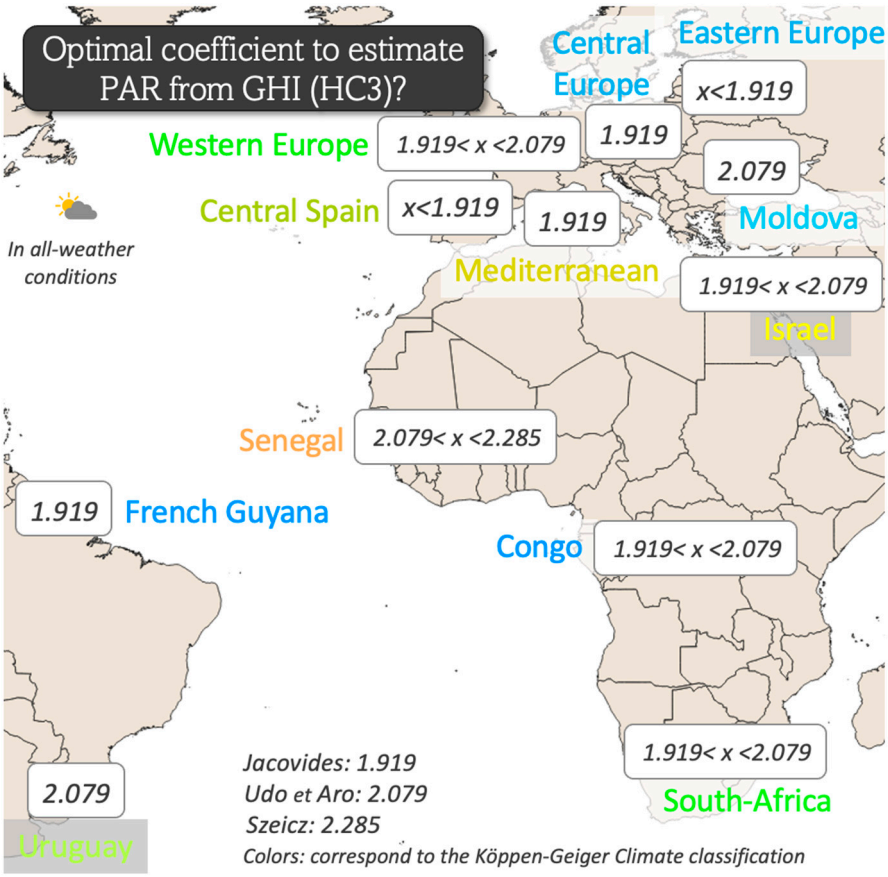


Figure S15: Map with the optimal coefficients to estimate PAR from GHI per group in the geographical coverage of MSG prime.

# Quality assessment of 11 methods to derive 30-min PAR [400-700] nm from satellite imagery in **all-weather** conditions											
# Author	Dr Claire THOMAS – Date of generation of the validation results: June 2022										
# Method 1 (M1)	Jacovides (2004) from HC3 (coeff 1.919)										
# Method 2 (M2)	Udo et Aro (1999) from HC3 (coeff 2.079)										
# Method 3 (M3)	Szeicz (1974) from HC3 (coeff 2.285)										
# Method 4 (M4)	Weighted Kato with BB CMF from HC3										
# Method 5 (M5)	Weighted Kato with PAR CMF from HC3										
# Method 6 (M6)	Jacovides (2004) from CAMS-Rad (coeff 1.919)										
# Method 7 (M7)	Udo et Aro (1999) from CAMS-Rad (coeff 2.079)										
# Method 8 (M8)	Szeicz (1974) from CAMS-Rad (coeff 2.285)										
# Method 9 (M9)	Weighted Kato with BB CMF from CAMS-Rad										
# Method 10 (M10)	Weighted Kato with PAR CMF from CAMS-Rad										
# Method 11 (M11)	DWD SARAH-3										
# MBE	Bias in µmol/m2/s (relative bias in percent) - ideal 0										
# STD	STandard Deviation in µmol/m2/s (relative standard deviation in percent) - ideal 0										
# RMSE	Root Mean Square Error in µmol/m2/s (relative Root Mean Square Error in percent) - ideal 0										
# CC	Correlation Coefficient - ideal 1										
# Station	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11
Aberystwyth_University	MBE −23.6 (−5.1 %)	MBE 13.3 (2.9 %)	MBE 60.7 (13.0 %)	MBE −5.9 (−1.3 %)	MBE 12.5 (2.7 %)	MBE −20.5 (−4.4 %)	MBE 16.6 (3.6 %)	MBE 64.4 (13.8 %)	MBE −2.5 (−0.5 %)	MBE 18.7 (4.0 %)	MBE −2.0 (−0.4 %)
NBDATA: 49792	STD 131.3 (28.2 %)	STD 129.9 (27.9 %)	STD 140.8 (30.2 %)	STD 130.0 (27.9 %)	STD 133.0 (28.6 %)	STD 139.5 (30.0 %)	STD 135.6 (29.1 %)	STD 142.1 (30.5 %)	STD 138.3 (29.7 %)	STD 145.6 (31.3 %)	STD 154.6 (33.2 %)
MEANREF: 465.4	RMSE 133.4 (28.7 %)	RMSE 130.6 (28.1 %)	RMSE 153.3 (32.9 %)	RMSE 130.2 (28.0 %)	RMSE 133.5 (28.7 %)	RMSE 141.0 (30.3 %)	RMSE 136.6 (29.4 %)	RMSE 156.0 (33.5 %)	RMSE 138.3 (29.7 %)	RMSE 146.8 (31.5 %)	RMSE 154.6 (33.2 %)
	CC 0.957	CC 0.957	CC 0.957	CC 0.957	CC 0.955	CC 0.953	CC 0.953	CC 0.953	CC 0.952	CC 0.946	CC 0.940
Abbotts_Hall	MBE −19.2 (−3.9 %)	MBE 19.7 (4.1 %)	MBE 69.8 (14.4 %)	MBE 0.7 (0.1 %)	MBE 17.0 (3.5 %)	MBE −1.6 (−0.3 %)	MBE 38.7 (8.0 %)	MBE 90.7 (18.7 %)	MBE 18.9 (3.9 %)	MBE 38.9 (8.0 %)	MBE 45.3 (9.3 %)
NBDATA: 15319	STD 136.4 (28.1 %)	STD 143.7 (29.6 %)	STD 163.4 (33.6 %)	STD 141.5 (29.1 %)	STD 139.7 (28.8 %)	STD 135.7 (27.9 %)	STD 139.6 (28.7 %)	STD 155.2 (31.9 %)	STD 139.3 (28.7 %)	STD 144.9 (29.8 %)	STD 154.0 (31.7 %)

MEANREF: 485.8	RMSE 137.8 (28.4 %)	RMSE 145.1 (29.9 %)	RMSE 177.7 (36.6 %)	RMSE 141.5 (29.1 %)	RMSE 140.7 (29.0 %)	RMSE 135.7 (27.9 %)	RMSE 144.9 (29.8 %)	RMSE 179.7 (37.0 %)	RMSE 140.5 (28.9 %)	RMSE 150.0 (30.9 %)	RMSE 160.5 (33.0 %)
	CC 0.946	CC 0.946	CC 0.946	CC 0.945	CC 0.946	CC 0.946	CC 0.946	CC 0.946	CC 0.944	CC 0.941	CC 0.934
Albacete	MBE 19.3 (2.4 %)	MBE 87.9 (10.9 %)	MBE 176.3 (21.9 %)	MBE 49.0 (6.1 %)	MBE 69.0 (8.6 %)	MBE 13.5 (1.7 %)	MBE 81.7 (10.2 %)	MBE 169.4 (21.1 %)	MBE 42.9 (5.3 %)	MBE 61.4 (7.6 %)	MBE 82.9 (10.3 %)
NBDATA: 13612	STD 169.4 (21.1 %)	STD 176.3 (21.9 %)	STD 201.0 (25.0 %)	STD 172.9 (21.5 %)	STD 183.8 (22.9 %)	STD 154.3 (19.2 %)	STD 163.0 (20.3 %)	STD 191.1 (23.8 %)	STD 158.9 (19.8 %)	STD 168.0 (20.9 %)	STD 174.0 (21.6 %)
MEANREF: 804.1	RMSE 170.5 (21.2 %)	RMSE 197.0 (24.5 %)	RMSE 267.4 (33.2 %)	RMSE 179.7 (22.3 %)	RMSE 196.3 (24.4 %)	RMSE 154.9 (19.3 %)	RMSE 182.3 (22.7 %)	RMSE 255.4 (31.8 %)	RMSE 164.6 (20.5 %)	RMSE 178.9 (22.2 %)	RMSE 192.7 (24.0 %)
	CC 0.955	CC 0.955	CC 0.955	CC 0.955	CC 0.949	CC 0.963	CC 0.963	CC 0.963	CC 0.962	CC 0.959	CC 0.955
Cordoba	MBE 3.7 (0.4 %)	MBE 75.2 (8.8 %)	MBE 167.2 (19.6 %)	MBE 41.6 (4.9 %)	MBE 57.7 (6.8 %)	MBE −9.7 (−1.1 %)	MBE 60.6 (7.1 %)	MBE 151.2 (17.7 %)	MBE 27.4 (3.2 %)	MBE 43.8 (5.1 %)	MBE 64.2 (7.5 %)
NBDATA: 13598	STD 105.3 (12.3 %)	STD 114.8 (13.4 %)	STD 149.6 (17.5 %)	STD 110.2 (12.9 %)	STD 118.1 (13.8 %)	STD 105.4 (12.3 %)	STD 114.7 (13.4 %)	STD 149.6 (17.5 %)	STD 109.4 (12.8 %)	STD 116.1 (13.6 %)	STD 107.6 (12.6 %)
MEANREF: 853.5	RMSE 105.4 (12.3 %)	RMSE 137.2 (16.1 %)	RMSE 224.4 (26.3 %)	RMSE 117.8 (13.8 %)	RMSE 131.4 (15.4 %)	RMSE 105.8 (12.4 %)	RMSE 129.8 (15.2 %)	RMSE 212.7 (24.9 %)	RMSE 112.8 (13.2 %)	RMSE 124.1 (14.5 %)	RMSE 125.3 (14.7 %)
	CC 0.983	CC 0.983	CC 0.983	CC 0.983	CC 0.980	CC 0.983	CC 0.983	CC 0.983	CC 0.983	CC 0.981	CC 0.983
Czech_BKF_SF	MBE 44.8 (9.1 %)	MBE 89.7 (18.1 %)	MBE 147.6 (29.9 %)	MBE 59.9 (12.1 %)	MBE 79.4 (16.1 %)	MBE 49.1 (9.9 %)	MBE 94.4 (19.1 %)	MBE 152.8 (30.9 %)	MBE 64.3 (13.0 %)	MBE 89.1 (18.0 %)	MBE 48.8 (9.9 %)
NBDATA: 97261	STD 161.3 (32.6 %)	STD 176.4 (35.7 %)	STD 206.0 (41.6 %)	STD 168.1 (34.0 %)	STD 169.9 (34.4 %)	STD 159.3 (32.2 %)	STD 166.9 (33.8 %)	STD 187.7 (37.9 %)	STD 163.4 (33.0 %)	STD 171.9 (34.8 %)	STD 152.8 (30.9 %)
MEANREF: 494.5	RMSE 167.4 (33.8 %)	RMSE 197.9 (40.0 %)	RMSE 253.4 (51.2 %)	RMSE 178.5 (36.1 %)	RMSE 187.5 (37.9 %)	RMSE 166.7 (33.7 %)	RMSE 191.8 (38.8 %)	RMSE 242.0 (48.9 %)	RMSE 175.6 (35.5 %)	RMSE 193.6 (39.1 %)	RMSE 160.4 (32.4 %)
	CC 0.942	CC 0.942	CC 0.942	CC 0.942	CC 0.940	CC 0.940	CC 0.940	CC 0.940	CC 0.939	CC 0.933	CC 0.946
Czech_BKF_ST	MBE 55.0 (11.7 %)	MBE 99.0 (21.0 %)	MBE 155.6 (33.0 %)	MBE 68.7 (14.6 %)	MBE 88.9 (18.8 %)	MBE 53.7 (11.4 %)	MBE 97.5 (20.7 %)	MBE 154.0 (32.6 %)	MBE 67.4 (14.3 %)	MBE 91.7 (19.4 %)	MBE 57.2 (12.1 %)
NBDATA: 107261	STD 155.2 (32.9 %)	STD 169.2 (35.8 %)	STD 197.5 (41.8 %)	STD 161.7 (34.2 %)	STD 163.1 (34.6 %)	STD 153.3 (32.5 %)	STD 160.6 (34.0 %)	STD 181.0 (38.3 %)	STD 157.3 (33.3 %)	STD 164.9 (34.9 %)	STD 147.4 (31.2 %)
MEANREF: 472.1	RMSE 164.7 (34.9 %)	RMSE 196.1 (41.5 %)	RMSE 251.4 (53.3 %)	RMSE 175.7 (37.2 %)	RMSE 185.8 (39.3 %)	RMSE 162.4 (34.4 %)	RMSE 187.9 (39.8 %)	RMSE 237.6 (50.3 %)	RMSE 171.1 (36.2 %)	RMSE 188.7 (40.0 %)	RMSE 158.1 (33.5 %)

	CC 0.944	CC 0.944	CC 0.944	CC 0.943	CC 0.942	CC 0.942	CC 0.942	CC 0.942	CC 0.941	CC 0.936	CC 0.947
Czech_BKG	MBE 55.2 (11.0 %)	MBE 101.6 (20.3 %)	MBE 161.3 (32.2 %)	MBE 70.7 (14.1 %)	MBE 90.0 (18.0 %)	MBE 55.3 (11.0 %)	MBE 101.7 (20.3 %)	MBE 161.4 (32.2 %)	MBE 70.9 (14.1 %)	MBE 96.4 (19.2 %)	MBE 62.4 (12.4 %)
NBDATA: 95409	STD 179.8 (35.9 %)	STD 195.2 (38.9 %)	STD 224.3 (44.7 %)	STD 186.7 (37.2 %)	STD 185.7 (37.0 %)	STD 167.0 (33.3 %)	STD 174.9 (34.9 %)	STD 195.5 (39.0 %)	STD 171.1 (34.1 %)	STD 177.5 (35.4 %)	STD 163.5 (32.6 %)
MEANREF: 501.3	RMSE 188.1 (37.5 %)	RMSE 220.0 (43.9 %)	RMSE 276.3 (55.1 %)	RMSE 199.6 (39.8 %)	RMSE 206.4 (41.2 %)	RMSE 175.9 (35.1 %)	RMSE 202.3 (40.4 %)	RMSE 253.6 (50.6 %)	RMSE 185.2 (36.9 %)	RMSE 202.0 (40.3 %)	RMSE 175.0 (34.9 %)
	CC 0.929	CC 0.929	CC 0.929	CC 0.928	CC 0.928	CC 0.934	CC 0.934	CC 0.934	CC 0.933	CC 0.929	CC 0.938
Czech_KRP	MBE -0.3 (-0.1 %)	MBE 43.3 (8.3 %)	MBE 99.6 (19.0 %)	MBE 14.7 (2.8 %)	MBE 35.2 (6.7 %)	MBE 17.4 (3.3 %)	MBE 62.5 (11.9 %)	MBE 120.7 (23.0 %)	MBE 32.7 (6.2 %)	MBE 55.9 (10.7 %)	MBE 44.6 (8.5 %)
NBDATA: 67624	STD 139.0 (26.5 %)	STD 146.8 (28.0 %)	STD 169.0 (32.2 %)	STD 141.7 (27.0 %)	STD 141.3 (27.0 %)	STD 131.7 (25.1 %)	STD 138.4 (26.4 %)	STD 159.9 (30.5 %)	STD 134.5 (25.7 %)	STD 140.3 (26.8 %)	STD 136.0 (25.9 %)
MEANREF: 524.3	RMSE 139.0 (26.5 %)	RMSE 153.1 (29.2 %)	RMSE 196.1 (37.4 %)	RMSE 142.5 (27.2 %)	RMSE 145.6 (27.8 %)	RMSE 132.8 (25.3 %)	RMSE 151.9 (29.0 %)	RMSE 200.3 (38.2 %)	RMSE 138.4 (26.4 %)	RMSE 151.0 (28.8 %)	RMSE 143.1 (27.3 %)
	CC 0.953	CC 0.953	CC 0.953	CC 0.954	CC 0.954	CC 0.958	CC 0.958	CC 0.958	CC 0.958	CC 0.955	CC 0.958
Czech_LNZ	MBE -5.0 (-0.9 %)	MBE 40.9 (7.4 %)	MBE 99.9 (18.0 %)	MBE 14.6 (2.6 %)	MBE 29.7 (5.3 %)	MBE 15.8 (2.8 %)	MBE 63.3 (11.4 %)	MBE 124.6 (22.5 %)	MBE 36.0 (6.5 %)	MBE 56.0 (10.1 %)	MBE 54.3 (9.8 %)
NBDATA: 53200	STD 126.6 (22.8 %)	STD 139.7 (25.2 %)	STD 169.7 (30.6 %)	STD 131.8 (23.7 %)	STD 129.3 (23.3 %)	STD 116.6 (21.0 %)	STD 125.0 (22.5 %)	STD 150.9 (27.2 %)	STD 120.1 (21.6 %)	STD 125.9 (22.7 %)	STD 115.0 (20.7 %)
MEANREF: 555.1	RMSE 126.7 (22.8 %)	RMSE 145.6 (26.2 %)	RMSE 196.9 (35.5 %)	RMSE 132.6 (23.9 %)	RMSE 132.7 (23.9 %)	RMSE 117.6 (21.2 %)	RMSE 140.1 (25.2 %)	RMSE 195.7 (35.3 %)	RMSE 125.3 (22.6 %)	RMSE 137.8 (24.8 %)	RMSE 127.2 (22.9 %)
	CC 0.965	CC 0.965	CC 0.965	CC 0.966	CC 0.967	CC 0.970	CC 0.970	CC 0.970	CC 0.970	CC 0.968	CC 0.973
Czech_RAJ	MBE 14.3 (2.7 %)	MBE 60.2 (11.2 %)	MBE 119.3 (22.2 %)	MBE 31.2 (5.8 %)	MBE 47.2 (8.8 %)	MBE 20.7 (3.9 %)	MBE 67.2 (12.5 %)	MBE 127.0 (23.7 %)	MBE 37.8 (7.0 %)	MBE 60.6 (11.3 %)	MBE 45.3 (8.4 %)
NBDATA: 78864	STD 151.6 (28.3 %)	STD 163.2 (30.4 %)	STD 189.8 (35.4 %)	STD 156.5 (29.2 %)	STD 155.3 (28.9 %)	STD 144.6 (27.0 %)	STD 149.7 (27.9 %)	STD 169.0 (31.5 %)	STD 146.9 (27.4 %)	STD 153.1 (28.6 %)	STD 156.9 (29.3 %)
MEANREF: 536.3	RMSE 152.3 (28.4 %)	RMSE 173.9 (32.4 %)	RMSE 224.1 (41.8 %)	RMSE 159.6 (29.8 %)	RMSE 162.3 (30.3 %)	RMSE 146.1 (27.2 %)	RMSE 164.1 (30.6 %)	RMSE 211.4 (39.4 %)	RMSE 151.7 (28.3 %)	RMSE 164.7 (30.7 %)	RMSE 163.3 (30.5 %)
	CC 0.950	CC 0.950	CC 0.950	CC 0.950	CC 0.950	CC 0.953	CC 0.953	CC 0.953	CC 0.953	CC 0.949	CC 0.946
Czech_STI	MBE 0.5 (0.1 %)	MBE 45.4 (8.4 %)	MBE 103.3 (19.2 %)	MBE 17.0 (3.2 %)	MBE 33.5 (6.2 %)	MBE 21.9 (4.1 %)	MBE 68.7 (12.7 %)	MBE 128.9 (23.9 %)	MBE 39.0 (7.2 %)	MBE 61.0 (11.3 %)	MBE 52.0 (9.7 %)

NBDATA: 98898	STD 149.3 (27.7 %)	STD 161.5 (30.0 %)	STD 189.0 (35.1 %)	STD 154.4 (28.7 %)	STD 153.9 (28.6 %)	STD 144.2 (26.8 %)	STD 151.4 (28.1 %)	STD 173.6 (32.2 %)	STD 147.9 (27.4 %)	STD 155.5 (28.9 %)	STD 170.3 (31.6 %)
MEANREF: 539.0	RMSE 149.3 (27.7 %)	RMSE 167.7 (31.1 %)	RMSE 215.4 (40.0 %)	RMSE 155.4 (28.8 %)	RMSE 157.5 (29.2 %)	RMSE 145.8 (27.1 %)	RMSE 166.3 (30.8 %)	RMSE 216.2 (40.1 %)	RMSE 153.0 (28.4 %)	RMSE 167.1 (31.0 %)	RMSE 178.1 (33.0 %)
	CC 0.952	CC 0.952	CC 0.952	CC 0.952	CC 0.952	CC 0.954	CC 0.954	CC 0.954	CC 0.954	CC 0.949	CC 0.939
Czech_TRE	MBE -2.2 (-0.4 %)	MBE 42.2 (7.9 %)	MBE 99.3 (18.6 %)	MBE 14.6 (2.7 %)	MBE 33.4 (6.2 %)	MBE 13.2 (2.5 %)	MBE 58.9 (11.0 %)	MBE 117.7 (22.0 %)	MBE 30.4 (5.7 %)	MBE 53.1 (9.9 %)	MBE 38.7 (7.2 %)
NBDATA: 122815	STD 135.2 (25.3 %)	STD 145.4 (27.2 %)	STD 171.3 (32.1 %)	STD 138.9 (26.0 %)	STD 137.6 (25.7 %)	STD 133.7 (25.0 %)	STD 139.0 (26.0 %)	STD 159.4 (29.8 %)	STD 135.4 (25.3 %)	STD 141.1 (26.4 %)	STD 143.7 (26.9 %)
MEANREF: 534.3	RMSE 135.2 (25.3 %)	RMSE 151.4 (28.3 %)	RMSE 198.0 (37.1 %)	RMSE 139.7 (26.1 %)	RMSE 141.6 (26.5 %)	RMSE 134.3 (25.1 %)	RMSE 151.0 (28.3 %)	RMSE 198.1 (37.1 %)	RMSE 138.7 (26.0 %)	RMSE 150.7 (28.2 %)	RMSE 148.8 (27.8 %)
	CC 0.959	CC 0.959	CC 0.959	CC 0.959	CC 0.960	CC 0.959	CC 0.959	CC 0.959	CC 0.959	CC 0.956	CC 0.954
EFDC_DE-Hai	MBE -18.4 (-3.3 %)	MBE 27.1 (4.8 %)	MBE 85.8 (15.2 %)	MBE -1.4 (-0.3 %)	MBE 17.8 (3.2 %)	MBE 5.9 (1.1 %)	MBE 53.5 (9.5 %)	MBE 114.8 (20.3 %)	MBE 23.9 (4.2 %)	MBE 48.5 (8.6 %)	MBE 41.8 (7.4 %)
NBDATA: 119559	STD 164.9 (29.2 %)	STD 171.1 (30.3 %)	STD 190.4 (33.7 %)	STD 165.6 (29.3 %)	STD 163.7 (29.0 %)	STD 151.3 (26.8 %)	STD 153.9 (27.2 %)	STD 169.7 (30.0 %)	STD 151.4 (26.8 %)	STD 156.7 (27.7 %)	STD 158.9 (28.1 %)
MEANREF: 564.9	RMSE 165.9 (29.4 %)	RMSE 173.2 (30.7 %)	RMSE 208.9 (37.0 %)	RMSE 165.6 (29.3 %)	RMSE 164.7 (29.1 %)	RMSE 151.4 (26.8 %)	RMSE 162.9 (28.8 %)	RMSE 204.9 (36.3 %)	RMSE 153.3 (27.1 %)	RMSE 164.0 (29.0 %)	RMSE 164.3 (29.1 %)
	CC 0.940	CC 0.940	CC 0.940	CC 0.940	CC 0.942	CC 0.949	CC 0.949	CC 0.949	CC 0.949	CC 0.946	CC 0.945
EFDC_FR-Aur	MBE -25.7 (-3.8 %)	MBE 28.2 (4.2 %)	MBE 97.7 (14.5 %)	MBE 0.1 (0.0 %)	MBE 22.7 (3.4 %)	MBE -19.3 (-2.9 %)	MBE 35.2 (5.2 %)	MBE 105.4 (15.7 %)	MBE 6.8 (1.0 %)	MBE 29.9 (4.4 %)	MBE 32.5 (4.8 %)
NBDATA: 132908	STD 135.7 (20.2 %)	STD 132.7 (19.7 %)	STD 147.0 (21.8 %)	STD 132.3 (19.7 %)	STD 134.9 (20.1 %)	STD 144.6 (21.5 %)	STD 142.6 (21.2 %)	STD 157.1 (23.3 %)	STD 142.1 (21.1 %)	STD 149.5 (22.2 %)	STD 155.3 (23.1 %)
MEANREF: 672.7	RMSE 138.1 (20.5 %)	RMSE 135.6 (20.2 %)	RMSE 176.5 (26.2 %)	RMSE 132.3 (19.7 %)	RMSE 136.8 (20.3 %)	RMSE 145.9 (21.7 %)	RMSE 146.9 (21.8 %)	RMSE 189.1 (28.1 %)	RMSE 142.2 (21.1 %)	RMSE 152.5 (22.7 %)	RMSE 158.7 (23.6 %)
	CC 0.970	CC 0.970	CC 0.970	CC 0.970	CC 0.969	CC 0.965	CC 0.965	CC 0.965	CC 0.965	CC 0.961	CC 0.958
EFDC_FR-Pue	MBE -14.3 (-2.0 %)	MBE 44.6 (6.2 %)	MBE 120.6 (16.7 %)	MBE 11.7 (1.6 %)	MBE 32.0 (4.4 %)	MBE -12.8 (-1.8 %)	MBE 46.3 (6.4 %)	MBE 122.4 (17.0 %)	MBE 13.2 (1.8 %)	MBE 32.0 (4.4 %)	MBE 28.6 (4.0 %)
NBDATA: 114025	STD 148.5 (20.6 %)	STD 146.6 (20.3 %)	STD 161.7 (22.4 %)	STD 146.7 (20.3 %)	STD 154.3 (21.4 %)	STD 149.0 (20.6 %)	STD 149.9 (20.8 %)	STD 168.5 (23.3 %)	STD 149.1 (20.7 %)	STD 156.4 (21.7 %)	STD 145.1 (20.1 %)

MEANREF: 721.9	RMSE 149.2 (20.7 %)	RMSE 153.2 (21.2 %)	RMSE 201.7 (27.9 %)	RMSE 147.1 (20.4 %)	RMSE 157.6 (21.8 %)	RMSE 149.5 (20.7 %)	RMSE 156.9 (21.7 %)	RMSE 208.3 (28.9 %)	RMSE 149.7 (20.7 %)	RMSE 159.6 (22.1 %)	RMSE 147.9 (20.5 %)
	CC 0.965	CC 0.965	CC 0.965	CC 0.965	CC 0.961	CC 0.964	CC 0.964	CC 0.964	CC 0.964	CC 0.960	CC 0.966
EFDC_GF-Guy	MBE 1.5 (0.2 %)	MBE 70.1 (8.5 %)	MBE 158.3 (19.3 %)	MBE 85.8 (10.5 %)	MBE 114.5 (14.0 %)	MBE 63.7 (7.8 %)	MBE 137.5 (16.7 %)	MBE 232.5 (28.3 %)	MBE 154.6 (18.8 %)	MBE 187.1 (22.8 %)	MBE 170.5 (20.8 %)
NBDATA: 65742	STD 241.9 (29.5 %)	STD 262.8 (32.0 %)	STD 299.4 (36.5 %)	STD 268.1 (32.7 %)	STD 272.8 (33.2 %)	STD 227.3 (27.7 %)	STD 245.0 (29.8 %)	STD 278.2 (33.9 %)	STD 249.0 (30.3 %)	STD 255.1 (31.1 %)	STD 296.5 (36.1 %)
MEANREF: 820.6	RMSE 241.9 (29.5 %)	RMSE 272.0 (33.1 %)	RMSE 338.7 (41.3 %)	RMSE 281.5 (34.3 %)	RMSE 295.9 (36.1 %)	RMSE 236.0 (28.7 %)	RMSE 280.9 (34.2 %)	RMSE 362.6 (44.1 %)	RMSE 293.1 (35.7 %)	RMSE 316.4 (38.5 %)	RMSE 342.0 (41.6 %)
	CC 0.911	CC 0.911	CC 0.911	CC 0.910	CC 0.909	CC 0.918	CC 0.918	CC 0.918	CC 0.918	CC 0.915	CC 0.893
EFDC_IE-Dri	MBE 6.5 (1.4 %)	MBE 44.7 (9.9 %)	MBE 93.8 (20.8 %)	MBE 21.1 (4.7 %)	MBE 45.8 (10.1 %)	MBE 26.0 (5.8 %)	MBE 65.8 (14.6 %)	MBE 117.1 (25.9 %)	MBE 41.4 (9.2 %)	MBE 66.7 (14.8 %)	MBE 57.1 (12.6 %)
NBDATA: 49985	STD 152.7 (33.8 %)	STD 157.2 (34.8 %)	STD 172.4 (38.2 %)	STD 154.4 (34.2 %)	STD 160.9 (35.7 %)	STD 161.7 (35.8 %)	STD 167.8 (37.2 %)	STD 184.5 (40.9 %)	STD 165.6 (36.7 %)	STD 174.8 (38.7 %)	STD 176.0 (39.0 %)
MEANREF: 451.2	RMSE 152.8 (33.9 %)	RMSE 163.4 (36.2 %)	RMSE 196.2 (43.5 %)	RMSE 155.9 (34.5 %)	RMSE 167.3 (37.1 %)	RMSE 163.8 (36.3 %)	RMSE 180.3 (39.9 %)	RMSE 218.5 (48.4 %)	RMSE 170.7 (37.8 %)	RMSE 187.1 (41.4 %)	RMSE 185.0 (41.0 %)
	CC 0.932	CC 0.932	CC 0.932	CC 0.931	CC 0.926	CC 0.923	CC 0.923	CC 0.923	CC 0.922	CC 0.915	CC 0.912
EFDC_IL-Yat	MBE -37.2 (-3.9 %)	MBE 38.9 (4.1 %)	MBE 137.0 (14.4 %)	MBE -11.5 (-1.2 %)	MBE 6.9 (0.7 %)	MBE -44.2 (-4.6 %)	MBE 31.4 (3.3 %)	MBE 128.8 (13.5 %)	MBE -18.8 (-2.0 %)	MBE -0.7 (-0.1 %)	MBE 61.2 (6.4 %)
NBDATA: 112699	STD 116.6 (12.3 %)	STD 126.6 (13.3 %)	STD 162.2 (17.1 %)	STD 118.1 (12.4 %)	STD 122.2 (12.9 %)	STD 127.1 (13.4 %)	STD 132.4 (13.9 %)	STD 161.7 (17.0 %)	STD 126.4 (13.3 %)	STD 125.3 (13.2 %)	STD 141.5 (14.9 %)
MEANREF: 950.5	RMSE 122.4 (12.9 %)	RMSE 132.4 (13.9 %)	RMSE 212.3 (22.3 %)	RMSE 118.6 (12.5 %)	RMSE 122.4 (12.9 %)	RMSE 134.5 (14.1 %)	RMSE 136.1 (14.3 %)	RMSE 206.7 (21.7 %)	RMSE 127.8 (13.4 %)	RMSE 125.3 (13.2 %)	RMSE 154.1 (16.2 %)
	CC 0.981	CC 0.981	CC 0.981	CC 0.981	CC 0.980	CC 0.978	CC 0.978	CC 0.978	CC 0.978	CC 0.978	CC 0.973
EFDC_IT-Bci	MBE 17.9 (2.4 %)	MBE 80.8 (11.0 %)	MBE 161.8 (22.0 %)	MBE 50.3 (6.8 %)	MBE 68.3 (9.3 %)	MBE 24.8 (3.4 %)	MBE 88.3 (12.0 %)	MBE 170.0 (23.1 %)	MBE 57.5 (7.8 %)	MBE 74.4 (10.1 %)	MBE 87.7 (11.9 %)
NBDATA: 85222	STD 137.2 (18.6 %)	STD 148.0 (20.1 %)	STD 178.5 (24.2 %)	STD 142.1 (19.3 %)	STD 145.5 (19.8 %)	STD 133.3 (18.1 %)	STD 146.9 (19.9 %)	STD 180.7 (24.5 %)	STD 140.9 (19.1 %)	STD 144.7 (19.6 %)	STD 152.8 (20.7 %)
MEANREF: 736.3	RMSE 138.3 (18.8 %)	RMSE 168.6 (22.9 %)	RMSE 240.9 (32.7 %)	RMSE 150.8 (20.5 %)	RMSE 160.8 (21.8 %)	RMSE 135.6 (18.4 %)	RMSE 171.4 (23.3 %)	RMSE 248.1 (33.7 %)	RMSE 152.2 (20.7 %)	RMSE 162.7 (22.1 %)	RMSE 176.2 (23.9 %)

	CC 0.968	CC 0.968	CC 0.968	CC 0.968	CC 0.967	CC 0.970	CC 0.970	CC 0.970	CC 0.970	CC 0.969	CC 0.965
EFDC_IT-Noe	MBE 12.4 (1.6 %)	MBE 78.1 (10.1 %)	MBE 162.6 (21.0 %)	MBE 48.4 (6.2 %)	MBE 63.2 (8.2 %)	MBE 8.4 (1.1 %)	MBE 73.7 (9.5 %)	MBE 157.8 (20.4 %)	MBE 44.3 (5.7 %)	MBE 59.5 (7.7 %)	MBE 65.5 (8.5 %)
NBDATA: 38582	STD 120.4 (15.5 %)	STD 134.7 (17.4 %)	STD 170.6 (22.0 %)	STD 127.5 (16.5 %)	STD 131.0 (16.9 %)	STD 121.4 (15.7 %)	STD 133.9 (17.3 %)	STD 168.0 (21.7 %)	STD 127.9 (16.5 %)	STD 133.2 (17.2 %)	STD 126.3 (16.3 %)
MEANREF: 774.8	RMSE 121.1 (15.6 %)	RMSE 155.7 (20.1 %)	RMSE 235.7 (30.4 %)	RMSE 136.4 (17.6 %)	RMSE 145.4 (18.8 %)	RMSE 121.6 (15.7 %)	RMSE 152.9 (19.7 %)	RMSE 230.5 (29.7 %)	RMSE 135.4 (17.5 %)	RMSE 145.9 (18.8 %)	RMSE 142.3 (18.4 %)
	CC 0.976	CC 0.976	CC 0.976	CC 0.976	CC 0.975	CC 0.976	CC 0.976	CC 0.976	CC 0.976	CC 0.974	CC 0.976
EFDC_RU-Fyo	MBE 34.3 (7.5 %)	MBE 75.2 (16.5 %)	MBE 127.8 (28.0 %)	MBE 48.0 (10.5 %)	MBE 72.3 (15.9 %)	MBE 5.0 (1.1 %)	MBE 41.5 (9.6 %)	MBE 88.6 (20.4 %)	MBE 16.3 (3.8 %)	MBE 36.9 (8.5 %)	MBE 44.3 (10.2 %)
NBDATA: 126014	STD 158.7 (34.8 %)	STD 173.3 (38.0 %)	STD 200.3 (44.0 %)	STD 167.2 (36.7 %)	STD 177.5 (39.0 %)	STD 149.8 (34.6 %)	STD 154.7 (35.7 %)	STD 170.3 (39.3 %)	STD 152.6 (35.2 %)	STD 153.2 (35.3 %)	STD 147.8 (34.1 %)
MEANREF: 455.6	RMSE 162.3 (35.6 %)	RMSE 188.9 (41.5 %)	RMSE 237.6 (52.1 %)	RMSE 174.0 (38.2 %)	RMSE 191.7 (42.1 %)	RMSE 149.9 (34.6 %)	RMSE 160.2 (37.0 %)	RMSE 191.9 (44.3 %)	RMSE 153.4 (35.4 %)	RMSE 157.6 (36.4 %)	RMSE 154.3 (35.6 %)
	CC 0.931	CC 0.931	CC 0.931	CC 0.930	CC 0.924	CC 0.932	CC 0.932	CC 0.932	CC 0.931	CC 0.932	CC 0.941
EFDC_SN-Dhr	MBE -113.8 (-11.7 %)	MBE -42.2 (-4.3 %)	MBE 50.0 (5.1 %)	MBE -64.2 (-6.6 %)	MBE -49.4 (-5.1 %)	MBE 7.8 (0.8 %)	MBE 89.5 (9.2 %)	MBE 194.7 (20.0 %)	MBE 65.2 (6.7 %)	MBE 78.4 (8.1 %)	MBE 144.2 (14.8 %)
NBDATA:26234	STD 158.8 (16.3 %)	STD 162.3 (16.7 %)	STD 184.5 (19.0 %)	STD 160.6 (16.5 %)	STD 158.4 (16.3 %)	STD 140.0 (14.4 %)	STD 157.4 (16.2 %)	STD 196.6 (20.2 %)	STD 156.0 (16.0 %)	STD 161.4 (16.6 %)	STD 170.7 (17.6 %)
MEANREF: 972.5	RMSE 195.4 (20.1 %)	RMSE 167.7 (17.2 %)	RMSE 191.2 (19.7 %)	RMSE 172.9 (17.8 %)	RMSE 166.0 (17.1 %)	RMSE 140.3 (14.4 %)	RMSE 181.1 (18.6 %)	RMSE 276.7 (28.5 %)	RMSE 169.1 (17.4 %)	RMSE 179.4 (18.4 %)	RMSE 223.4 (23.0 %)
	CC 0.962	CC 0.962	CC 0.962	CC 0.962	CC 0.963	CC 0.972	CC 0.972	CC 0.972	CC 0.970	CC 0.967	CC 0.967
EFDC_UK-Amo	MBE 23.0 (6.0 %)	MBE 57.2 (14.8 %)	MBE 101.1 (26.2 %)	MBE 34.0 (8.8 %)	MBE 61.0 (15.8 %)	MBE 26.7 (7.2 %)	MBE 59.9 (16.1 %)	MBE 102.6 (27.6 %)	MBE 37.0 (10.0 %)	MBE 62.2 (16.8 %)	MBE 59.0 (15.9 %)
NBDATA: 101058	STD 157.5 (40.8 %)	STD 164.9 (42.7 %)	STD 181.0 (46.9 %)	STD 159.3 (41.3 %)	STD 162.6 (42.1 %)	STD 160.0 (43.1 %)	STD 165.7 (44.6 %)	STD 179.3 (48.3 %)	STD 162.0 (43.6 %)	STD 164.5 (44.3 %)	STD 180.5 (48.6 %)
MEANREF: 386.0	RMSE 159.1 (41.2 %)	RMSE 174.5 (45.2 %)	RMSE 207.3 (53.7 %)	RMSE 162.9 (42.2 %)	RMSE 173.7 (45.0 %)	RMSE 162.3 (43.7 %)	RMSE 176.2 (47.4 %)	RMSE 206.6 (55.6 %)	RMSE 166.2 (44.7 %)	RMSE 175.9 (47.3 %)	RMSE 189.9 (51.1 %)
	CC 0.901	CC 0.901	CC 0.901	CC 0.902	CC 0.901	CC 0.894	CC 0.894	CC 0.894	CC 0.894	CC 0.894	CC 0.878

EFDC_ZA-Kru	MBE -22.5 (-2.8 %)	MBE 43.5 (5.3 %)	MBE 128.6 (15.8 %)	MBE 25.0 (3.1 %)	MBE 56.6 (7.0 %)	MBE 16.4 (2.0 %)	MBE 85.7 (10.5 %)	MBE 174.8 (21.5 %)	MBE 66.5 (8.2 %)	MBE 99.0 (12.2 %)	MBE 82.1 (10.1 %)
NBDATA: 4833	STD 143.2 (17.6 %)	STD 145.2 (17.8 %)	STD 169.5 (20.8 %)	STD 143.0 (17.6 %)	STD 152.6 (18.7 %)	STD 161.0 (19.8 %)	STD 169.7 (20.8 %)	STD 199.6 (24.5 %)	STD 168.8 (20.7 %)	STD 183.3 (22.5 %)	STD 154.3 (18.9 %)
MEANREF: 814.4	RMSE 144.9 (17.8 %)	RMSE 151.6 (18.6 %)	RMSE 212.8 (26.1 %)	RMSE 145.2 (17.8 %)	RMSE 162.8 (20.0 %)	RMSE 161.8 (19.9 %)	RMSE 190.1 (23.3 %)	RMSE 265.3 (32.6 %)	RMSE 181.4 (22.3 %)	RMSE 208.3 (25.6 %)	RMSE 174.8 (21.5 %)
	CC 0.973	CC 0.973	CC 0.973	CC 0.973	CC 0.970	CC 0.965	CC 0.965	CC 0.965	CC 0.964	CC 0.958	CC 0.971
Kishinev	MBE -45.7 (-7.0 %)	MBE 5.2 (0.8 %)	MBE 70.8 (10.8 %)	MBE -23.5 (-3.6 %)	MBE -3.5 (-0.5 %)	MBE -49.4 (-7.5 %)	MBE 1.2 (0.2 %)	MBE 66.4 (10.1 %)	MBE -27.4 (-4.2 %)	MBE -7.0 (-1.1 %)	MBE -5.5 (-0.8 %)
NBDATA: 140960	STD 145.6 (22.2 %)	STD 145.3 (22.1 %)	STD 162.0 (24.7 %)	STD 143.6 (21.9 %)	STD 144.2 (22.0 %)	STD 142.5 (21.7 %)	STD 139.1 (21.2 %)	STD 152.3 (23.2 %)	STD 138.9 (21.2 %)	STD 141.2 (21.5 %)	STD 137.1 (20.9 %)
MEANREF: 656.2	RMSE 152.6 (23.3 %)	RMSE 145.4 (22.2 %)	RMSE 176.8 (26.9 %)	RMSE 145.5 (22.2 %)	RMSE 144.2 (22.0 %)	RMSE 150.8 (23.0 %)	RMSE 139.1 (21.2 %)	RMSE 166.1 (25.3 %)	RMSE 141.6 (21.6 %)	RMSE 141.4 (21.5 %)	RMSE 137.2 (20.9 %)
	CC 0.965	CC 0.965	CC 0.965	CC 0.965	CC 0.965	CC 0.967	CC 0.967	CC 0.967	CC 0.967	CC 0.966	CC 0.968
Lugo	MBE 42.5 (7.5 %)	MBE 93.6 (16.4 %)	MBE 159.4 (28.0 %)	MBE 68.4 (12.0 %)	MBE 90.6 (15.9 %)	MBE 58.4 (10.2 %)	MBE 110.8 (19.4 %)	MBE 178.2 (31.3 %)	MBE 84.9 (14.9 %)	MBE 109.8 (19.3 %)	MBE 95.6 (16.8 %)
NBDATA: 12738	STD 185.3 (32.5 %)	STD 194.1 (34.0 %)	STD 216.7 (38.0 %)	STD 187.2 (32.8 %)	STD 187.7 (32.9 %)	STD 191.4 (33.6 %)	STD 200.9 (35.3 %)	STD 224.2 (39.3 %)	STD 194.4 (34.1 %)	STD 201.4 (35.3 %)	STD 204.8 (35.9 %)
MEANREF: 570.0	RMSE 190.1 (33.3 %)	RMSE 215.5 (37.8 %)	RMSE 269.0 (47.2 %)	RMSE 199.3 (35.0 %)	RMSE 208.5 (36.6 %)	RMSE 200.1 (35.1 %)	RMSE 229.5 (40.3 %)	RMSE 286.4 (50.2 %)	RMSE 212.2 (37.2 %)	RMSE 229.4 (40.2 %)	RMSE 226.0 (39.6 %)
	CC 0.933	CC 0.933	CC 0.933	CC 0.934	CC 0.934	CC 0.928	CC 0.928	CC 0.928	CC 0.930	CC 0.926	CC 0.921
PeronneSaintQuentin	MBE 1.1 (0.2 %)	MBE 44.1 (8.6 %)	MBE 99.6 (19.3 %)	MBE 19.1 (3.7 %)	MBE 40.5 (7.9 %)	MBE 11.1 (2.2 %)	MBE 55.0 (10.7 %)	MBE 111.5 (21.6 %)	MBE 29.3 (5.7 %)	MBE 51.4 (10.0 %)	MBE 67.7 (13.1 %)
NBDATA: 54875	STD 114.7 (22.3 %)	STD 120.2 (23.3 %)	STD 141.5 (27.5 %)	STD 115.2 (22.4 %)	STD 116.2 (22.5 %)	STD 119.4 (23.2 %)	STD 124.1 (24.1 %)	STD 144.0 (28.0 %)	STD 120.1 (23.3 %)	STD 125.4 (24.3 %)	STD 130.1 (25.2 %)
MEANREF: 515.2	RMSE 114.7 (22.3 %)	RMSE 128.0 (24.8 %)	RMSE 173.0 (33.6 %)	RMSE 116.8 (22.7 %)	RMSE 123.0 (23.9 %)	RMSE 119.9 (23.3 %)	RMSE 135.7 (26.3 %)	RMSE 182.1 (35.3 %)	RMSE 123.6 (24.0 %)	RMSE 135.5 (26.3 %)	RMSE 146.6 (28.5 %)
	CC 0.967	CC 0.967	CC 0.967	CC 0.968	CC 0.968	CC 0.965	CC 0.965	CC 0.965	CC 0.965	CC 0.963	CC 0.961
Pokola	MBE -27.9 (-3.5 %)	MBE 37.1 (4.6 %)	MBE 120.8 (15.0 %)	MBE 40.2 (5.0 %)	MBE 63.6 (7.9 %)	MBE 70.0 (8.7 %)	MBE 143.2 (17.7 %)	MBE 237.4 (29.4 %)	MBE 146.8 (18.2 %)	MBE 171.9 (21.3 %)	MBE 157.9 (19.6 %)

NBDATA: 15392	STD 209.6 (26.0 %)	STD 211.6 (26.2 %)	STD 227.3 (28.1 %)	STD 210.3 (26.0 %)	STD 210.1 (26.0 %)	STD 213.5 (26.4 %)	STD 223.3 (27.6 %)	STD 248.9 (30.8 %)	STD 223.2 (27.6 %)	STD 231.8 (28.7 %)	STD 235.0 (29.1 %)
MEANREF: 807.7	RMSE 211.5 (26.2 %)	RMSE 214.8 (26.6 %)	RMSE 257.4 (31.9 %)	RMSE 214.1 (26.5 %)	RMSE 219.5 (27.2 %)	RMSE 224.7 (27.8 %)	RMSE 265.2 (32.8 %)	RMSE 344.0 (42.6 %)	RMSE 267.2 (33.1 %)	RMSE 288.6 (35.7 %)	RMSE 283.1 (35.1 %)
	CC 0.934	CC 0.934	CC 0.934	CC 0.935	CC 0.936	CC 0.932	CC 0.932	CC 0.932	CC 0.933	CC 0.928	CC 0.925
Uruguay	MBE -75.8 (-7.9 %)	MBE -2.0 (-0.2 %)	MBE 93.0 (9.7 %)	MBE -23.6 (-2.5 %)	MBE 8.7 (0.9 %)	MBE -81.3 (-8.5 %)	MBE -8.0 (-0.8 %)	MBE 86.5 (9.0 %)	MBE -29.2 (-3.0 %)	MBE 0.0 (0.0 %)	MBE -2.8 (-0.3 %)
NBDATA: 28349	STD 184.2 (19.2 %)	STD 195.3 (20.3 %)	STD 225.1 (23.4 %)	STD 191.1 (19.9 %)	STD 219.0 (22.8 %)	STD 162.7 (16.9 %)	STD 165.7 (17.2 %)	STD 187.8 (19.5 %)	STD 163.8 (17.0 %)	STD 177.2 (18.4 %)	STD 186.4 (19.4 %)
MEANREF: 961.2	RMSE 199.2 (20.7 %)	RMSE 195.3 (20.3 %)	RMSE 243.6 (25.3 %)	RMSE 192.5 (20.0 %)	RMSE 219.2 (22.8 %)	RMSE 181.9 (18.9 %)	RMSE 165.9 (17.3 %)	RMSE 206.8 (21.5 %)	RMSE 166.4 (17.3 %)	RMSE 177.2 (18.4 %)	RMSE 186.4 (19.4 %)
	CC 0.952	CC 0.952	CC 0.952	CC 0.952	CC 0.936	CC 0.963	CC 0.963	CC 0.963	CC 0.963	CC 0.956	CC 0.954
Valenciennes	MBE -24.6 (-4.3 %)	MBE 21.2 (3.7 %)	MBE 80.2 (14.0 %)	MBE -4.8 (-0.8 %)	MBE 15.6 (2.7 %)	MBE -17.1 (-3.0 %)	MBE 29.3 (5.1 %)	MBE 89.1 (15.5 %)	MBE 2.9 (0.5 %)	MBE 25.8 (4.5 %)	MBE 37.8 (6.6 %)
NBDATA: 7064	STD 131.4 (22.9 %)	STD 134.0 (23.3 %)	STD 152.0 (26.5 %)	STD 130.5 (22.7 %)	STD 132.4 (23.1 %)	STD 139.1 (24.2 %)	STD 139.0 (24.2 %)	STD 152.7 (26.6 %)	STD 137.2 (23.9 %)	STD 143.9 (25.1 %)	STD 145.0 (25.3 %)
MEANREF: 574.2	RMSE 133.7 (23.3 %)	RMSE 135.7 (23.6 %)	RMSE 171.9 (29.9 %)	RMSE 130.6 (22.7 %)	RMSE 133.3 (23.2 %)	RMSE 140.1 (24.4 %)	RMSE 142.0 (24.7 %)	RMSE 176.8 (30.8 %)	RMSE 137.3 (23.9 %)	RMSE 146.2 (25.5 %)	RMSE 149.8 (26.1 %)
	CC 0.962	CC 0.962	CC 0.962	CC 0.963	CC 0.962	CC 0.958	CC 0.958	CC 0.958	CC 0.959	CC 0.955	CC 0.954
Villaviciosa	MBE -13.1 (-2.3 %)	MBE 33.2 (5.8 %)	MBE 92.8 (16.3 %)	MBE 13.0 (2.3 %)	MBE 33.8 (6.0 %)	MBE 31.5 (5.5 %)	MBE 81.5 (14.3 %)	MBE 145.9 (25.7 %)	MBE 59.8 (10.5 %)	MBE 86.4 (15.2 %)	MBE 44.1 (7.8 %)
NBDATA: 13535	STD 151.6 (26.7 %)	STD 156.6 (27.5 %)	STD 176.4 (31.0 %)	STD 153.3 (27.0 %)	STD 150.6 (26.5 %)	STD 149.3 (26.3 %)	STD 154.2 (27.1 %)	STD 174.1 (30.6 %)	STD 152.0 (26.7 %)	STD 162.0 (28.5 %)	STD 157.6 (27.7 %)
MEANREF: 568.6	RMSE 152.2 (26.8 %)	RMSE 160.1 (28.2 %)	RMSE 199.4 (35.1 %)	RMSE 153.8 (27.1 %)	RMSE 154.4 (27.2 %)	RMSE 152.6 (26.8 %)	RMSE 174.4 (30.7 %)	RMSE 227.2 (40.0 %)	RMSE 163.4 (28.7 %)	RMSE 183.6 (32.3 %)	RMSE 163.7 (28.8 %)
	CC 0.953	CC 0.953	CC 0.953	CC 0.953	CC 0.955	CC 0.954	CC 0.954	CC 0.954	CC 0.954	CC 0.948	CC 0.949
Vitoria	MBE 40.0 (6.4 %)	MBE 95.4 (15.3 %)	MBE 166.7 (26.7 %)	MBE 67.8 (10.8 %)	MBE 91.7 (14.7 %)	MBE 40.5 (6.5 %)	MBE 96.0 (15.4 %)	MBE 167.4 (26.8 %)	MBE 68.4 (10.9 %)	MBE 91.8 (14.7 %)	MBE 77.2 (12.3 %)
NBDATA: 13551	STD 164.7 (26.4 %)	STD 170.4 (27.3 %)	STD 192.1 (30.7 %)	STD 167.1 (26.8 %)	STD 173.5 (27.8 %)	STD 175.4 (28.1 %)	STD 182.3 (29.2 %)	STD 204.6 (32.7 %)	STD 178.9 (28.6 %)	STD 188.0 (30.1 %)	STD 188.8 (30.2 %)

MEANREF: 624.7	RMSE 169.5 (27.1 %)	RMSE 195.3 (31.3 %)	RMSE 254.3 (40.7 %)	RMSE 180.3 (28.9 %)	RMSE 196.2 (31.4 %)	RMSE 180.0 (28.8 %)	RMSE 206.0 (33.0 %)	RMSE 264.4 (42.3 %)	RMSE 191.5 (30.7 %)	RMSE 209.2 (33.5 %)	RMSE 203.9 (32.6 %)
	CC 0.952	CC 0.952	CC 0.952	CC 0.952	CC 0.948	CC 0.945	CC 0.945	CC 0.945	CC 0.945	CC 0.940	CC 0.938
Zaragoza	MBE 22.6 (3.1 %)	MBE 86.0 (11.7 %)	MBE 167.7 (22.7 %)	MBE 55.8 (7.6 %)	MBE 74.1 (10.0 %)	MBE 29.2 (4.0 %)	MBE 93.2 (12.6 %)	MBE 175.6 (23.8 %)	MBE 62.6 (8.5 %)	MBE 80.0 (10.8 %)	MBE 97.8 (13.2 %)
NBDATA: 13575	STD 171.0 (23.2 %)	STD 178.0 (24.1 %)	STD 201.9 (27.3 %)	STD 174.7 (23.7 %)	STD 182.5 (24.7 %)	STD 168.4 (22.8 %)	STD 176.3 (23.9 %)	STD 201.5 (27.3 %)	STD 172.9 (23.4 %)	STD 180.7 (24.5 %)	STD 177.0 (24.0 %)
MEANREF: 738.4	RMSE 172.5 (23.4 %)	RMSE 197.7 (26.8 %)	RMSE 262.5 (35.6 %)	RMSE 183.4 (24.8 %)	RMSE 197.0 (26.7 %)	RMSE 171.0 (23.2 %)	RMSE 199.4 (27.0 %)	RMSE 267.2 (36.2 %)	RMSE 183.9 (24.9 %)	RMSE 197.6 (26.8 %)	RMSE 202.2 (27.4 %)
	CC 0.953	CC 0.953	CC 0.953	CC 0.952	CC 0.948	CC 0.954	CC 0.954	CC 0.954	CC 0.954	CC 0.950	CC 0.951

Table S1: Validation results for the comparison between the 11 methods to estimate PAR from satellite imagery at the 33 in-situ stations in all-weather conditions

# Quality assessment of 11 methods to derive 30-min PAR [400-700] nm from satellite imagery in cloud-free conditions											
# Author - date	Dr Claire THOMAS – Date of the generation of the results: June 2022										
# Method 1 (M1)	Jacovides (2004) from HC3 (coeff 1.919)										
# Method 2 (M2)	Udo et Aro (1999) from HC3 (coeff 2.079)										
# Method 3 (M3)	Szeicz (1974) from HC3 (coeff 2.285)										
# Method 4 (M4)	Weighted Kato BB CMF from HC3										
# Method 5 (M5)	Weighted Kato PAR CMF from HC3										
# Method 6 (M6)	Jacovides (2004) from CAMS (coeff 1.919)										
# Method 7 (M7)	Udo et Aro (1999) from CAMS (coeff 2.079)										
# Method 8 (M8)	Szeicz (1974) from CAMS (coeff 2.285)										
# Method 9 (M9)	Weighted Kato BB CMF from CAMS										
# Method 10 (M10)	Weighted Kato PAR CMF from CAMS										
# Method 11 (M11)	DWD SARAH-3										
# MBE	Bias in µmol/m2/s (relative bias in percent) - ideal 0										
# STD	STandard Deviation in µmol/m2/s (relative standard deviation in percent) - ideal 0										
# RMSE	Root Mean Square Error in µmol/m2/s (relative Root Mean Square Error in percent) - ideal 0										
# CC	Correlation Coefficient - ideal 1										
# Station	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11
Aberystwyth_University	MBE -103.5 (-12.1 %)	MBE -41.1 (-4.8 %)	MBE 39.2 (4.6 %)	MBE -75.5 (-8.9 %)	MBE -69.2 (-8.1 %)	MBE -132.1 (-15.5 %)	MBE -72.1 (-8.5 %)	MBE 5.2 (0.6 %)	MBE -105.4 (-12.4 %)	MBE -93.0 (-10.9 %)	MBE -110.1 (-12.9 %)
NBDATA: 16298	STD 120.7 (14.2 %)	STD 124.1 (14.6 %)	STD 144.9 (17.0 %)	STD 119.7 (14.0 %)	STD 114.7 (13.5 %)	STD 116.7 (13.7 %)	STD 111.7 (13.1 %)	STD 122.9 (14.4 %)	STD 110.0 (12.9 %)	STD 104.9 (12.3 %)	STD 152.7 (17.9 %)
MEANREF: 851.8	RMSE 159.0 (18.7 %)	RMSE 130.7 (15.3 %)	RMSE 150.1 (17.6 %)	RMSE 141.5 (16.6 %)	RMSE 133.9 (15.7 %)	RMSE 176.3 (20.7 %)	RMSE 132.9 (15.6 %)	RMSE 123.0 (14.4 %)	RMSE 152.4 (17.9 %)	RMSE 140.2 (16.5 %)	RMSE 188.3 (22.1 %)
	CC 0.970	CC 0.970	CC 0.970	CC 0.971	CC 0.973	CC 0.974	CC 0.974	CC 0.974	CC 0.975	CC 0.977	CC 0.952
Abbotts_Hall	MBE -70.8 (-9.2 %)	MBE -12.8 (-1.7 %)	MBE 61.9 (8.1 %)	MBE -42.6 (-5.6 %)	MBE -33.9 (-4.4 %)	MBE -87.0 (-11.4 %)	MBE -30.4 (-4.0 %)	MBE 42.6 (5.6 %)	MBE -59.9 (-7.8 %)	MBE -48.2 (-6.3 %)	MBE -25.6 (-3.3 %)
NBDATA: 5358	STD 111.9 (14.6 %)	STD 117.6 (15.3 %)	STD 140.4 (18.3 %)	STD 115.1 (15.0 %)	STD 110.4 (14.4 %)	STD 105.1 (13.7 %)	STD 102.5 (13.4 %)	STD 116.5 (15.2 %)	STD 101.6 (13.3 %)	STD 97.3 (12.7 %)	STD 114.3 (14.9 %)
MEANREF: 766.4	RMSE 132.4 (17.3 %)	RMSE 118.3 (15.4 %)	RMSE 153.4 (20.0 %)	RMSE 122.7 (16.0 %)	RMSE 115.5 (15.1 %)	RMSE 136.4 (17.8 %)	RMSE 106.9 (13.9 %)	RMSE 124.1 (16.2 %)	RMSE 118.0 (15.4 %)	RMSE 108.6 (14.2 %)	RMSE 117.1 (15.3 %)

	CC 0.971	CC 0.971	CC 0.971	CC 0.971	CC 0.973	CC 0.976	CC 0.976	CC 0.976	CC 0.976	CC 0.978	CC 0.970
Albacete	MBE -69.9 (-6.6 %)	MBE 11.9 (1.1 %)	MBE 117.2 (11.2 %)	MBE -34.3 (-3.3 %)	MBE -21.9 (-2.1 %)	MBE -57.4 (-5.5 %)	MBE 25.4 (2.4 %)	MBE 132.1 (12.6 %)	MBE -21.5 (-2.0 %)	MBE -9.5 (-0.9 %)	MBE 12.5 (1.2 %)
NBDATA: 8332	STD 67.4 (6.4 %)	STD 83.0 (7.9 %)	STD 127.0 (12.1 %)	STD 74.2 (7.1 %)	STD 76.7 (7.3 %)	STD 70.4 (6.7 %)	STD 88.1 (8.4 %)	STD 133.1 (12.7 %)	STD 78.8 (7.5 %)	STD 78.9 (7.5 %)	STD 80.9 (7.7 %)
MEANREF: 1050.7	RMSE 97.1 (9.2 %)	RMSE 83.8 (8.0 %)	RMSE 172.8 (16.4 %)	RMSE 81.7 (7.8 %)	RMSE 79.7 (7.6 %)	RMSE 90.8 (8.6 %)	RMSE 91.7 (8.7 %)	RMSE 187.5 (17.8 %)	RMSE 81.6 (7.8 %)	RMSE 79.5 (7.6 %)	RMSE 81.9 (7.8 %)
	CC 0.993	CC 0.993	CC 0.993	CC 0.992	CC 0.993	CC 0.992	CC 0.992	CC 0.992	CC 0.992	CC 0.993	CC 0.991
Cordoba	MBE -32.4 (-3.1 %)	MBE 51.0 (4.9 %)	MBE 158.4 (15.3 %)	MBE 11.9 (1.2 %)	MBE 21.2 (2.1 %)	MBE -39.1 (-3.8 %)	MBE 43.7 (4.2 %)	MBE 150.4 (14.6 %)	MBE 4.7 (0.5 %)	MBE 16.2 (1.6 %)	MBE 41.6 (4.0 %)
NBDATA: 9726	STD 64.9 (6.3 %)	STD 86.9 (8.4 %)	STD 135.2 (13.1 %)	STD 77.6 (7.5 %)	STD 76.9 (7.4 %)	STD 69.3 (6.7 %)	STD 86.7 (8.4 %)	STD 131.6 (12.7 %)	STD 78.4 (7.6 %)	STD 78.0 (7.6 %)	STD 76.4 (7.4 %)
MEANREF: 1032.7	RMSE 72.5 (7.0 %)	RMSE 100.7 (9.8 %)	RMSE 208.2 (20.2 %)	RMSE 78.5 (7.6 %)	RMSE 79.7 (7.7 %)	RMSE 79.5 (7.7 %)	RMSE 97.1 (9.4 %)	RMSE 199.8 (19.3 %)	RMSE 78.5 (7.6 %)	RMSE 79.7 (7.7 %)	RMSE 87.0 (8.4 %)
	CC 0.993	CC 0.993	CC 0.993	CC 0.993	CC 0.994	CC 0.992	CC 0.992	CC 0.992	CC 0.992	CC 0.993	CC 0.992
Czech_BKF_SF	MBE -14.5 (-1.7 %)	MBE 56.2 (6.5 %)	MBE 147.3 (17.1 %)	MBE 9.2 (1.1 %)	MBE 13.2 (1.5 %)	MBE -49.5 (-5.7 %)	MBE 18.3 (2.1 %)	MBE 105.7 (12.2 %)	MBE -27.3 (-3.2 %)	MBE -14.5 (-1.7 %)	MBE -24.3 (-2.8 %)
NBDATA: 31397	STD 123.2 (14.3 %)	STD 143.2 (16.6 %)	STD 181.5 (21.0 %)	STD 132.2 (15.3 %)	STD 124.4 (14.4 %)	STD 118.6 (13.7 %)	STD 126.9 (14.7 %)	STD 153.6 (17.8 %)	STD 119.9 (13.9 %)	STD 114.9 (13.3 %)	STD 129.5 (15.0 %)
MEANREF: 863.1	RMSE 124.1 (14.4 %)	RMSE 153.8 (17.8 %)	RMSE 233.8 (27.1 %)	RMSE 132.5 (15.4 %)	RMSE 125.1 (14.5 %)	RMSE 128.5 (14.9 %)	RMSE 128.2 (14.9 %)	RMSE 186.4 (21.6 %)	RMSE 123.0 (14.2 %)	RMSE 115.8 (13.4 %)	RMSE 131.7 (15.3 %)
	CC 0.972	CC 0.972	CC 0.972	CC 0.972	CC 0.976	CC 0.971	CC 0.971	CC 0.971	CC 0.972	CC 0.975	CC 0.967
Aberystwyth_University	MBE -103.5 (-12.1 %)	MBE -41.1 (-4.8 %)	MBE 39.2 (4.6 %)	MBE -75.5 (-8.9 %)	MBE -69.2 (-8.1 %)	MBE -132.1 (-15.5 %)	MBE -72.1 (-8.5 %)	MBE 5.2 (0.6 %)	MBE -105.4 (-12.4 %)	MBE -93.0 (-10.9 %)	MBE -110.1 (-12.9 %)
NBDATA: 16298	STD 120.7 (14.2 %)	STD 124.1 (14.6 %)	STD 144.9 (17.0 %)	STD 119.7 (14.0 %)	STD 114.7 (13.5 %)	STD 116.7 (13.7 %)	STD 111.7 (13.1 %)	STD 122.9 (14.4 %)	STD 110.0 (12.9 %)	STD 104.9 (12.3 %)	STD 152.7 (17.9 %)
MEANREF: 851.8	RMSE 159.0 (18.7 %)	RMSE 130.7 (15.3 %)	RMSE 150.1 (17.6 %)	RMSE 141.5 (16.6 %)	RMSE 133.9 (15.7 %)	RMSE 176.3 (20.7 %)	RMSE 132.9 (15.6 %)	RMSE 123.0 (14.4 %)	RMSE 152.4 (17.9 %)	RMSE 140.2 (16.5 %)	RMSE 188.3 (22.1 %)
	CC 0.970	CC 0.970	CC 0.970	CC 0.971	CC 0.973	CC 0.974	CC 0.974	CC 0.974	CC 0.975	CC 0.977	CC 0.952
Abbotts_Hall	MBE -70.8 (-9.2 %)	MBE -12.8 (-1.7 %)	MBE 61.9 (8.1 %)	MBE -42.6 (-5.6 %)	MBE -33.9 (-4.4 %)	MBE -87.0 (-11.4 %)	MBE -30.4 (-4.0 %)	MBE 42.6 (5.6 %)	MBE -59.9 (-7.8 %)	MBE -48.2 (-6.3 %)	MBE -25.6 (-3.3 %)
NBDATA: 5358	STD 111.9 (14.6 %)	STD 117.6 (15.3 %)	STD 140.4 (18.3 %)	STD 115.1 (15.0 %)	STD 110.4 (14.4 %)	STD 105.1 (13.7 %)	STD 102.5 (13.4 %)	STD 116.5 (15.2 %)	STD 101.6 (13.3 %)	STD 97.3 (12.7 %)	STD 114.3 (14.9 %)
MEANREF: 766.4	RMSE 132.4 (17.3 %)	RMSE 118.3 (15.4 %)	RMSE 153.4 (20.0 %)	RMSE 122.7 (16.0 %)	RMSE 115.5 (15.1 %)	RMSE 136.4 (17.8 %)	RMSE 106.9 (13.9 %)	RMSE 124.1 (16.2 %)	RMSE 118.0 (15.4 %)	RMSE 108.6 (14.2 %)	RMSE 117.1 (15.3 %)
	CC 0.971	CC 0.971	CC 0.971	CC 0.971	CC 0.973	CC 0.976	CC 0.976	CC 0.976	CC 0.976	CC 0.978	CC 0.970
Albacete	MBE -69.9 (-6.6 %)	MBE 11.9 (1.1 %)	MBE 117.2 (11.2 %)	MBE -34.3 (-3.3 %)	MBE -21.9 (-2.1 %)	MBE -57.4 (-5.5 %)	MBE 25.4 (2.4 %)	MBE 132.1 (12.6 %)	MBE -21.5 (-2.0 %)	MBE -9.5 (-0.9 %)	MBE 12.5 (1.2 %)

NBDATA: 8332	STD 67.4 (6.4 %)	STD 83.0 (7.9 %)	STD 127.0 (12.1 %)	STD 74.2 (7.1 %)	STD 76.7 (7.3 %)	STD 70.4 (6.7 %)	STD 88.1 (8.4 %)	STD 133.1 (12.7 %)	STD 78.8 (7.5 %)	STD 78.9 (7.5 %)	STD 80.9 (7.7 %)
MEANREF: 1050.7	RMSE 97.1 (9.2 %)	RMSE 83.8 (8.0 %)	RMSE 172.8 (16.4 %)	RMSE 81.7 (7.8 %)	RMSE 79.7 (7.6 %)	RMSE 90.8 (8.6 %)	RMSE 91.7 (8.7 %)	RMSE 187.5 (17.8 %)	RMSE 81.6 (7.8 %)	RMSE 79.5 (7.6 %)	RMSE 81.9 (7.8 %)
	CC 0.993	CC 0.993	CC 0.993	CC 0.992	CC 0.993	CC 0.992	CC 0.992	CC 0.992	CC 0.992	CC 0.993	CC 0.991
Cordoba	MBE -32.4 (-3.1 %)	MBE 51.0 (4.9 %)	MBE 158.4 (15.3 %)	MBE 11.9 (1.2 %)	MBE 21.2 (2.1 %)	MBE -39.1 (-3.8 %)	MBE 43.7 (4.2 %)	MBE 150.4 (14.6 %)	MBE 4.7 (0.5 %)	MBE 16.2 (1.6 %)	MBE 41.6 (4.0 %)
NBDATA: 9726	STD 64.9 (6.3 %)	STD 86.9 (8.4 %)	STD 135.2 (13.1 %)	STD 77.6 (7.5 %)	STD 76.9 (7.4 %)	STD 69.3 (6.7 %)	STD 86.7 (8.4 %)	STD 131.6 (12.7 %)	STD 78.4 (7.6 %)	STD 78.0 (7.6 %)	STD 76.4 (7.4 %)
MEANREF: 1032.7	RMSE 72.5 (7.0 %)	RMSE 100.7 (9.8 %)	RMSE 208.2 (20.2 %)	RMSE 78.5 (7.6 %)	RMSE 79.7 (7.7 %)	RMSE 79.5 (7.7 %)	RMSE 97.1 (9.4 %)	RMSE 199.8 (19.3 %)	RMSE 78.5 (7.6 %)	RMSE 79.7 (7.7 %)	RMSE 87.0 (8.4 %)
	CC 0.993	CC 0.993	CC 0.993	CC 0.993	CC 0.994	CC 0.992	CC 0.992	CC 0.992	CC 0.992	CC 0.993	CC 0.992
Czech_BKF_SF	MBE -14.5 (-1.7 %)	MBE 56.2 (6.5 %)	MBE 147.3 (17.1 %)	MBE 9.2 (1.1 %)	MBE 13.2 (1.5 %)	MBE -49.5 (-5.7 %)	MBE 18.3 (2.1 %)	MBE 105.7 (12.2 %)	MBE -27.3 (-3.2 %)	MBE -14.5 (-1.7 %)	MBE -24.3 (-2.8 %)
NBDATA: 31397	STD 123.2 (14.3 %)	STD 143.2 (16.6 %)	STD 181.5 (21.0 %)	STD 132.2 (15.3 %)	STD 124.4 (14.4 %)	STD 118.6 (13.7 %)	STD 126.9 (14.7 %)	STD 153.6 (17.8 %)	STD 119.9 (13.9 %)	STD 114.9 (13.3 %)	STD 129.5 (15.0 %)
MEANREF: 863.1	RMSE 124.1 (14.4 %)	RMSE 153.8 (17.8 %)	RMSE 233.8 (27.1 %)	RMSE 132.5 (15.4 %)	RMSE 125.1 (14.5 %)	RMSE 128.5 (14.9 %)	RMSE 128.2 (14.9 %)	RMSE 186.4 (21.6 %)	RMSE 123.0 (14.2 %)	RMSE 115.8 (13.4 %)	RMSE 131.7 (15.3 %)
	CC 0.972	CC 0.972	CC 0.972	CC 0.972	CC 0.976	CC 0.971	CC 0.971	CC 0.971	CC 0.972	CC 0.975	CC 0.967
Czech_BKF_ST	MBE -1.2 (-0.1 %)	MBE 78.0 (8.2 %)	MBE 179.9 (18.9 %)	MBE 24.7 (2.6 %)	MBE 29.0 (3.1 %)	MBE -43.8 (-4.6 %)	MBE 31.8 (3.3 %)	MBE 129.2 (13.6 %)	MBE -19.6 (-2.1 %)	MBE -5.2 (-0.5 %)	MBE -16.8 (-1.8 %)
NBDATA: 28517	STD 131.2 (13.8 %)	STD 146.7 (15.4 %)	STD 177.8 (18.7 %)	STD 138.7 (14.6 %)	STD 130.0 (13.7 %)	STD 127.8 (13.4 %)	STD 134.5 (14.2 %)	STD 156.0 (16.4 %)	STD 128.9 (13.6 %)	STD 123.3 (13.0 %)	STD 140.0 (14.7 %)
MEANREF: 950.5	RMSE 131.3 (13.8 %)	RMSE 166.2 (17.5 %)	RMSE 253.0 (26.6 %)	RMSE 140.9 (14.8 %)	RMSE 133.2 (14.0 %)	RMSE 135.1 (14.2 %)	RMSE 138.2 (14.5 %)	RMSE 202.5 (21.3 %)	RMSE 130.3 (13.7 %)	RMSE 123.4 (13.0 %)	RMSE 141.0 (14.8 %)
	CC 0.960	CC 0.960	CC 0.960	CC 0.961	CC 0.965	CC 0.960	CC 0.960	CC 0.960	CC 0.961	CC 0.965	CC 0.952
Czech_BKG	MBE -1.2 (-0.1 %)	MBE 77.4 (8.2 %)	MBE 178.5 (18.9 %)	MBE 25.4 (2.7 %)	MBE 27.5 (2.9 %)	MBE -44.9 (-4.8 %)	MBE 30.1 (3.2 %)	MBE 126.6 (13.4 %)	MBE -19.8 (-2.1 %)	MBE -5.3 (-0.6 %)	MBE -13.1 (-1.4 %)
NBDATA: 27783	STD 148.4 (15.7 %)	STD 165.2 (17.5 %)	STD 197.0 (20.9 %)	STD 155.5 (16.5 %)	STD 144.8 (15.3 %)	STD 131.9 (14.0 %)	STD 140.0 (14.8 %)	STD 162.9 (17.3 %)	STD 133.3 (14.1 %)	STD 126.9 (13.4 %)	STD 143.1 (15.2 %)
MEANREF: 943.8	RMSE 148.4 (15.7 %)	RMSE 182.4 (19.3 %)	RMSE 265.9 (28.2 %)	RMSE 157.5 (16.7 %)	RMSE 147.4 (15.6 %)	RMSE 139.3 (14.8 %)	RMSE 143.2 (15.2 %)	RMSE 206.3 (21.9 %)	RMSE 134.7 (14.3 %)	RMSE 127.0 (13.5 %)	RMSE 143.7 (15.2 %)
	CC 0.951	CC 0.951	CC 0.951	CC 0.952	CC 0.958	CC 0.958	CC 0.958	CC 0.958	CC 0.959	CC 0.964	CC 0.952
Czech_KRP	MBE -37.4 (-4.4 %)	MBE 30.7 (3.6 %)	MBE 118.4 (13.9 %)	MBE -12.5 (-1.5 %)	MBE -3.1 (-0.4 %)	MBE -42.3 (-4.9 %)	MBE 25.4 (3.0 %)	MBE 112.6 (13.2 %)	MBE -18.1 (-2.1 %)	MBE -4.9 (-0.6 %)	MBE 8.8 (1.0 %)
NBDATA: 24063	STD 134.5 (15.8 %)	STD 145.7 (17.1 %)	STD 173.8 (20.4 %)	STD 138.4 (16.2 %)	STD 132.6 (15.5 %)	STD 108.0 (12.6 %)	STD 113.4 (13.3 %)	STD 138.1 (16.2 %)	STD 107.6 (12.6 %)	STD 102.8 (12.0 %)	STD 122.7 (14.4 %)
MEANREF: 854.1	RMSE 139.6 (16.3 %)	RMSE 148.9 (17.4 %)	RMSE 210.3 (24.6 %)	RMSE 139.0 (16.3 %)	RMSE 132.7 (15.5 %)	RMSE 116.0 (13.6 %)	RMSE 116.3 (13.6 %)	RMSE 178.1 (20.9 %)	RMSE 109.1 (12.8 %)	RMSE 102.9 (12.0 %)	RMSE 123.0 (14.4 %)

	CC 0.963	CC 0.963	CC 0.963	CC 0.964	CC 0.967	CC 0.976	CC 0.976	CC 0.976	CC 0.977	CC 0.979	CC 0.970
Czech_LNZ	MBE -18.1 (-2.1 %)	MBE 51.8 (6.0 %)	MBE 141.8 (16.6 %)	MBE 13.4 (1.6 %)	MBE 18.3 (2.1 %)	MBE -30.2 (-3.5 %)	MBE 38.8 (4.5 %)	MBE 127.5 (14.9 %)	MBE 0.5 (0.1 %)	MBE 12.0 (1.4 %)	MBE 32.8 (3.8 %)
NBDATA: 22789	STD 107.1 (12.5 %)	STD 125.2 (14.6 %)	STD 162.5 (19.0 %)	STD 115.4 (13.5 %)	STD 110.1 (12.8 %)	STD 88.8 (10.4 %)	STD 100.6 (11.7 %)	STD 134.0 (15.6 %)	STD 92.4 (10.8 %)	STD 90.4 (10.5 %)	STD 98.0 (11.4 %)
MEANREF: 856.9	RMSE 108.6 (12.7 %)	RMSE 135.5 (15.8 %)	RMSE 215.7 (25.2 %)	RMSE 116.2 (13.6 %)	RMSE 111.6 (13.0 %)	RMSE 93.8 (10.9 %)	RMSE 107.8 (12.6 %)	RMSE 185.0 (21.6 %)	RMSE 92.4 (10.8 %)	RMSE 91.2 (10.6 %)	RMSE 103.3 (12.1 %)
	CC 0.978	CC 0.978	CC 0.978	CC 0.979	CC 0.981	CC 0.984	CC 0.984	CC 0.984	CC 0.985	CC 0.987	CC 0.983
Czech_RAJ	MBE -25.0 (-2.8 %)	MBE 46.2 (5.3 %)	MBE 137.9 (15.7 %)	MBE 2.2 (0.3 %)	MBE 2.5 (0.3 %)	MBE -57.5 (-6.5 %)	MBE 11.0 (1.2 %)	MBE 99.2 (11.3 %)	MBE -31.8 (-3.6 %)	MBE -18.8 (-2.1 %)	MBE -15.0 (-1.7 %)
NBDATA: 29384	STD 127.5 (14.5 %)	STD 142.1 (16.2 %)	STD 174.8 (19.9 %)	STD 133.5 (15.2 %)	STD 123.7 (14.1 %)	STD 108.1 (12.3 %)	STD 112.9 (12.8 %)	STD 137.3 (15.6 %)	STD 107.6 (12.2 %)	STD 102.7 (11.7 %)	STD 126.8 (14.4 %)
MEANREF: 879.2	RMSE 129.9 (14.8 %)	RMSE 149.4 (17.0 %)	RMSE 222.7 (25.3 %)	RMSE 133.5 (15.2 %)	RMSE 123.8 (14.1 %)	RMSE 122.5 (13.9 %)	RMSE 113.5 (12.9 %)	RMSE 169.4 (19.3 %)	RMSE 112.2 (12.8 %)	RMSE 104.4 (11.9 %)	RMSE 127.7 (14.5 %)
	CC 0.968	CC 0.968	CC 0.968	CC 0.969	CC 0.973	CC 0.976	CC 0.976	CC 0.976	CC 0.977	CC 0.980	CC 0.968
Czech_STI	MBE -36.5 (-4.2 %)	MBE 33.3 (3.8 %)	MBE 123.1 (14.1 %)	MBE -9.9 (-1.1 %)	MBE -5.1 (-0.6 %)	MBE -50.9 (-5.8 %)	MBE 17.7 (2.0 %)	MBE 106.0 (12.1 %)	MBE -25.3 (-2.9 %)	MBE -13.0 (-1.5 %)	MBE -11.6 (-1.3 %)
NBDATA: 39175	STD 123.5 (14.1 %)	STD 140.5 (16.1 %)	STD 175.9 (20.1 %)	STD 131.0 (15.0 %)	STD 124.7 (14.3 %)	STD 100.7 (11.5 %)	STD 109.5 (12.5 %)	STD 139.0 (15.9 %)	STD 103.0 (11.8 %)	STD 99.6 (11.4 %)	STD 127.3 (14.6 %)
MEANREF: 873.6	RMSE 128.8 (14.7 %)	RMSE 144.4 (16.5 %)	RMSE 214.8 (24.6 %)	RMSE 131.4 (15.0 %)	RMSE 124.8 (14.3 %)	RMSE 112.8 (12.9 %)	RMSE 110.9 (12.7 %)	RMSE 174.8 (20.0 %)	RMSE 106.0 (12.1 %)	RMSE 100.5 (11.5 %)	RMSE 127.9 (14.6 %)
	CC 0.971	CC 0.971	CC 0.971	CC 0.972	CC 0.974	CC 0.979	CC 0.979	CC 0.979	CC 0.980	CC 0.982	CC 0.968
Czech_TRE	MBE -33.9 (-3.7 %)	MBE 38.8 (4.3 %)	MBE 132.3 (14.6 %)	MBE -4.2 (-0.5 %)	MBE 3.1 (0.3 %)	MBE -54.0 (-6.0 %)	MBE 17.0 (1.9 %)	MBE 108.3 (12.0 %)	MBE -25.5 (-2.8 %)	MBE -12.5 (-1.4 %)	MBE -1.1 (-0.1 %)
NBDATA: 44438	STD 123.2 (13.6 %)	STD 140.2 (15.5 %)	STD 175.1 (19.3 %)	STD 130.8 (14.5 %)	STD 125.4 (13.9 %)	STD 109.6 (12.1 %)	STD 118.5 (13.1 %)	STD 146.2 (16.2 %)	STD 111.4 (12.3 %)	STD 107.2 (11.8 %)	STD 134.4 (14.9 %)
MEANREF: 905.1	RMSE 127.7 (14.1 %)	RMSE 145.4 (16.1 %)	RMSE 219.5 (24.2 %)	RMSE 130.9 (14.5 %)	RMSE 125.4 (13.9 %)	RMSE 122.2 (13.5 %)	RMSE 119.7 (13.2 %)	RMSE 182.0 (20.1 %)	RMSE 114.3 (12.6 %)	RMSE 107.9 (11.9 %)	RMSE 134.4 (14.9 %)
	CC 0.970	CC 0.970	CC 0.970	CC 0.971	CC 0.974	CC 0.975	CC 0.975	CC 0.975	CC 0.976	CC 0.978	CC 0.964
EFDC_DE-Hai	MBE -62.4 (-6.8 %)	MBE 8.6 (0.9 %)	MBE 100.2 (10.9 %)	MBE -35.5 (-3.9 %)	MBE -28.1 (-3.1 %)	MBE -76.7 (-8.4 %)	MBE -6.8 (-0.7 %)	MBE 83.1 (9.1 %)	MBE -50.5 (-5.5 %)	MBE -36.2 (-4.0 %)	MBE -22.8 (-2.5 %)
NBDATA: 43855	STD 153.4 (16.8 %)	STD 162.4 (17.7 %)	STD 187.5 (20.5 %)	STD 154.6 (16.9 %)	STD 146.5 (16.0 %)	STD 122.2 (13.4 %)	STD 124.0 (13.6 %)	STD 143.7 (15.7 %)	STD 118.3 (12.9 %)	STD 111.4 (12.2 %)	STD 134.9 (14.7 %)
MEANREF: 915.1	RMSE 165.6 (18.1 %)	RMSE 162.6 (17.8 %)	RMSE 212.6 (23.2 %)	RMSE 158.6 (17.3 %)	RMSE 149.1 (16.3 %)	RMSE 144.3 (15.8 %)	RMSE 124.2 (13.6 %)	RMSE 166.0 (18.1 %)	RMSE 128.6 (14.1 %)	RMSE 117.1 (12.8 %)	RMSE 136.8 (15.0 %)
	CC 0.954	CC 0.954	CC 0.954	CC 0.955	CC 0.960	CC 0.971	CC 0.971	CC 0.971	CC 0.973	CC 0.976	CC 0.965
EFDC_FR-Aur	MBE -88.7 (-8.9 %)	MBE -12.8 (-1.3 %)	MBE 84.8 (8.5 %)	MBE -52.3 (-5.2 %)	MBE -39.7 (-4.0 %)	MBE -96.1 (-9.6 %)	MBE -20.8 (-2.1 %)	MBE 76.0 (7.6 %)	MBE -60.1 (-6.0 %)	MBE -47.0 (-4.7 %)	MBE -29.7 (-3.0 %)

NBDATA: 62325	STD 109.8 (11.0 %)	STD 109.4 (11.0 %)	STD 131.7 (13.2 %)	STD 105.8 (10.6 %)	STD 102.2 (10.2 %)	STD 105.2 (10.5 %)	STD 101.6 (10.2 %)	STD 121.5 (12.2 %)	STD 99.2 (9.9 %)	STD 94.7 (9.5 %)	STD 117.1 (11.7 %)
MEANREF: 998.5	RMSE 141.2 (14.1 %)	RMSE 110.1 (11.0 %)	RMSE 156.7 (15.7 %)	RMSE 118.0 (11.8 %)	RMSE 109.7 (11.0 %)	RMSE 142.5 (14.3 %)	RMSE 103.7 (10.4 %)	RMSE 143.3 (14.4 %)	RMSE 116.0 (11.6 %)	RMSE 105.7 (10.6 %)	RMSE 120.8 (12.1 %)
	CC 0.981	CC 0.981	CC 0.981	CC 0.982	CC 0.983	CC 0.983	CC 0.983	CC 0.983	CC 0.984	CC 0.985	CC 0.977
EFDC_FR-Pue	MBE -88.4 (-9.0 %)	MBE -13.9 (-1.4 %)	MBE 82.0 (8.4 %)	MBE -56.3 (-5.7 %)	MBE -44.5 (-4.5 %)	MBE -80.7 (-8.2 %)	MBE -5.5 (-0.6 %)	MBE 91.2 (9.3 %)	MBE -48.5 (-4.9 %)	MBE -37.1 (-3.8 %)	MBE -23.7 (-2.4 %)
NBDATA: 66555	STD 99.7 (10.2 %)	STD 102.5 (10.4 %)	STD 129.4 (13.2 %)	STD 96.2 (9.8 %)	STD 95.0 (9.7 %)	STD 99.8 (10.2 %)	STD 103.3 (10.5 %)	STD 130.8 (13.3 %)	STD 97.4 (9.9 %)	STD 95.3 (9.7 %)	STD 108.2 (11.0 %)
MEANREF: 982.1	RMSE 133.3 (13.6 %)	RMSE 103.4 (10.5 %)	RMSE 153.2 (15.6 %)	RMSE 111.5 (11.4 %)	RMSE 104.9 (10.7 %)	RMSE 128.3 (13.1 %)	RMSE 103.4 (10.5 %)	RMSE 159.5 (16.2 %)	RMSE 108.8 (11.1 %)	RMSE 102.3 (10.4 %)	RMSE 110.7 (11.3 %)
	CC 0.983	CC 0.983	CC 0.983	CC 0.984	CC 0.985	CC 0.983	CC 0.983	CC 0.983	CC 0.984	CC 0.985	CC 0.980
EFDC_GF-Guy	MBE -100.6 (-8.9 %)	MBE -15.0 (-1.3 %)	MBE 95.1 (8.4 %)	MBE 3.1 (0.3 %)	MBE 19.2 (1.7 %)	MBE -70.9 (-6.3 %)	MBE 17.2 (1.5 %)	MBE 130.5 (11.6 %)	MBE 35.7 (3.2 %)	MBE 49.2 (4.4 %)	MBE 28.7 (2.6 %)
NBDATA: 22375	STD 158.1 (14.0 %)	STD 172.6 (15.3 %)	STD 208.0 (18.5 %)	STD 175.7 (15.6 %)	STD 173.8 (15.4 %)	STD 142.5 (12.6 %)	STD 158.6 (14.1 %)	STD 197.0 (17.5 %)	STD 160.9 (14.3 %)	STD 154.9 (13.7 %)	STD 180.7 (16.0 %)
MEANREF: 1126.8	RMSE 187.4 (16.6 %)	RMSE 173.3 (15.4 %)	RMSE 228.7 (20.3 %)	RMSE 175.8 (15.6 %)	RMSE 174.9 (15.5 %)	RMSE 159.1 (14.1 %)	RMSE 159.5 (14.2 %)	RMSE 236.3 (21.0 %)	RMSE 164.8 (14.6 %)	RMSE 162.5 (14.4 %)	RMSE 182.9 (16.2 %)
	CC 0.965	CC 0.965	CC 0.965	CC 0.965	CC 0.967	CC 0.972	CC 0.972	CC 0.972	CC 0.972	CC 0.975	CC 0.964
EFDC_IE-Dri	MBE -105.2 (-13.1 %)	MBE -47.0 (-5.9 %)	MBE 27.9 (3.5 %)	MBE -87.1 (-10.8 %)	MBE -74.3 (-9.2 %)	MBE -100.2 (-12.5 %)	MBE -41.5 (-5.2 %)	MBE 34.0 (4.2 %)	MBE -82.2 (-10.2 %)	MBE -69.0 (-8.6 %)	MBE -61.3 (-7.6 %)
NBDATA: 12943	STD 138.9 (17.3 %)	STD 141.6 (17.6 %)	STD 160.4 (20.0 %)	STD 136.2 (17.0 %)	STD 131.2 (16.3 %)	STD 130.0 (16.2 %)	STD 128.1 (15.9 %)	STD 142.2 (17.7 %)	STD 125.2 (15.6 %)	STD 118.6 (14.8 %)	STD 148.1 (18.4 %)
MEANREF: 803.4	RMSE 174.2 (21.7 %)	RMSE 149.2 (18.6 %)	RMSE 162.8 (20.3 %)	RMSE 161.7 (20.1 %)	RMSE 150.8 (18.8 %)	RMSE 164.1 (20.4 %)	RMSE 134.6 (16.8 %)	RMSE 146.2 (18.2 %)	RMSE 149.8 (18.6 %)	RMSE 137.2 (17.1 %)	RMSE 160.3 (20.0 %)
	CC 0.962	CC 0.962	CC 0.962	CC 0.964	CC 0.967	CC 0.968	CC 0.968	CC 0.968	CC 0.969	CC 0.972	CC 0.957
EFDC_IL-Yat	MBE -58.2 (-5.4 %)	MBE 27.5 (2.5 %)	MBE 137.7 (12.7 %)	MBE -29.0 (-2.7 %)	MBE -15.5 (-1.4 %)	MBE -65.4 (-6.0 %)	MBE 19.6 (1.8 %)	MBE 129.2 (11.9 %)	MBE -36.5 (-3.4 %)	MBE -22.9 (-2.1 %)	MBE 29.1 (2.7 %)
NBDATA: 87497	STD 92.5 (8.5 %)	STD 107.1 (9.9 %)	STD 149.1 (13.7 %)	STD 95.6 (8.8 %)	STD 95.0 (8.8 %)	STD 107.4 (9.9 %)	STD 115.7 (10.7 %)	STD 150.0 (13.8 %)	STD 107.4 (9.9 %)	STD 101.7 (9.4 %)	STD 98.7 (9.1 %)
MEANREF: 1085.5	RMSE 109.3 (10.1 %)	RMSE 110.6 (10.2 %)	RMSE 203.0 (18.7 %)	RMSE 99.9 (9.2 %)	RMSE 96.3 (8.9 %)	RMSE 125.8 (11.6 %)	RMSE 117.4 (10.8 %)	RMSE 197.9 (18.2 %)	RMSE 113.5 (10.5 %)	RMSE 104.3 (9.6 %)	RMSE 102.9 (9.5 %)
	CC 0.988	CC 0.988	CC 0.988	CC 0.988	CC 0.988	CC 0.983	CC 0.983	CC 0.983	CC 0.983	CC 0.986	CC 0.987
EFDC_IT-Bci	MBE -31.2 (-3.1 %)	MBE 49.5 (5.0 %)	MBE 153.3 (15.4 %)	MBE 11.6 (1.2 %)	MBE 23.9 (2.4 %)	MBE -21.6 (-2.2 %)	MBE 59.9 (6.0 %)	MBE 164.8 (16.5 %)	MBE 21.6 (2.2 %)	MBE 32.9 (3.3 %)	MBE 56.3 (5.6 %)
NBDATA: 48066	STD 108.7 (10.9 %)	STD 125.1 (12.5 %)	STD 162.5 (16.3 %)	STD 116.8 (11.7 %)	STD 116.7 (11.7 %)	STD 106.0 (10.6 %)	STD 124.8 (12.5 %)	STD 164.6 (16.5 %)	STD 117.0 (11.7 %)	STD 115.3 (11.5 %)	STD 129.8 (13.0 %)
MEANREF: 998.4	RMSE 113.1 (11.3 %)	RMSE 134.6 (13.5 %)	RMSE 223.4 (22.4 %)	RMSE 117.4 (11.8 %)	RMSE 119.1 (11.9 %)	RMSE 108.1 (10.8 %)	RMSE 138.4 (13.9 %)	RMSE 232.9 (23.3 %)	RMSE 118.9 (11.9 %)	RMSE 119.9 (12.0 %)	RMSE 141.5 (14.2 %)

	CC 0.979	CC 0.979	CC 0.979	CC 0.980	CC 0.981	CC 0.980	CC 0.980	CC 0.980	CC 0.981	CC 0.982	CC 0.975
EFDC_IT-Noe	MBE -27.1 (-2.7 %)	MBE 55.1 (5.4 %)	MBE 161.1 (15.9 %)	MBE 19.1 (1.9 %)	MBE 28.3 (2.8 %)	MBE -36.1 (-3.6 %)	MBE 45.4 (4.5 %)	MBE 150.4 (14.8 %)	MBE 9.7 (1.0 %)	MBE 19.6 (1.9 %)	MBE 39.9 (3.9 %)
NBDATA: 23861	STD 76.9 (7.6 %)	STD 101.3 (10.0 %)	STD 147.7 (14.6 %)	STD 90.8 (9.0 %)	STD 91.7 (9.0 %)	STD 76.6 (7.6 %)	STD 100.0 (9.9 %)	STD 145.8 (14.4 %)	STD 90.2 (8.9 %)	STD 90.4 (8.9 %)	STD 101.3 (10.0 %)
MEANREF: 1014.1	RMSE 81.5 (8.0 %)	RMSE 115.3 (11.4 %)	RMSE 218.5 (21.5 %)	RMSE 92.8 (9.2 %)	RMSE 96.0 (9.5 %)	RMSE 84.7 (8.3 %)	RMSE 109.9 (10.8 %)	RMSE 209.5 (20.7 %)	RMSE 90.7 (8.9 %)	RMSE 92.5 (9.1 %)	RMSE 108.9 (10.7 %)
	CC 0.990	CC 0.990	CC 0.990	CC 0.990	CC 0.991	CC 0.990	CC 0.990	CC 0.990	CC 0.990	CC 0.991	CC 0.985
EFDC_RU-Fyo	MBE -40.6 (-5.2 %)	MBE 20.6 (2.7 %)	MBE 99.4 (12.8 %)	MBE -20.7 (-2.7 %)	MBE -9.5 (-1.2 %)	MBE -78.4 (-10.2 %)	MBE -21.0 (-2.7 %)	MBE 52.9 (6.9 %)	MBE -60.7 (-7.9 %)	MBE -47.5 (-6.2 %)	MBE -16.9 (-2.2 %)
NBDATA: 38110	STD 134.6 (17.4 %)	STD 151.1 (19.5 %)	STD 183.1 (23.6 %)	STD 143.5 (18.5 %)	STD 139.7 (18.0 %)	STD 141.2 (18.4 %)	STD 146.3 (19.1 %)	STD 164.8 (21.5 %)	STD 142.6 (18.6 %)	STD 135.6 (17.7 %)	STD 135.3 (17.7 %)
MEANREF: 774.7	RMSE 140.6 (18.1 %)	RMSE 152.5 (19.7 %)	RMSE 208.4 (26.9 %)	RMSE 145.0 (18.7 %)	RMSE 140.0 (18.1 %)	RMSE 161.5 (21.1 %)	RMSE 147.8 (19.3 %)	RMSE 173.1 (22.6 %)	RMSE 155.0 (20.2 %)	RMSE 143.7 (18.7 %)	RMSE 136.4 (17.8 %)
	CC 0.959	CC 0.959	CC 0.959	CC 0.959	CC 0.963	CC 0.951	CC 0.951	CC 0.951	CC 0.951	CC 0.957	CC 0.959
EFDC_UK-Amo	MBE -81.3 (-11.1 %)	MBE -26.8 (-3.6 %)	MBE 43.5 (5.9 %)	MBE -65.8 (-8.9 %)	MBE -52.1 (-7.1 %)	MBE -97.7 (-13.6 %)	MBE -45.9 (-6.4 %)	MBE 20.9 (2.9 %)	MBE -83.9 (-11.7 %)	MBE -69.6 (-9.7 %)	MBE -60.2 (-8.4 %)
NBDATA: 18580	STD 165.2 (22.5 %)	STD 174.7 (23.7 %)	STD 196.8 (26.8 %)	STD 166.1 (22.6 %)	STD 156.8 (21.3 %)	STD 161.3 (22.4 %)	STD 164.3 (22.8 %)	STD 178.5 (24.8 %)	STD 158.7 (22.1 %)	STD 148.4 (20.6 %)	STD 172.9 (24.0 %)
MEANREF: 735.6	RMSE 184.1 (25.0 %)	RMSE 176.7 (24.0 %)	RMSE 201.5 (27.4 %)	RMSE 178.6 (24.3 %)	RMSE 165.2 (22.5 %)	RMSE 188.6 (26.2 %)	RMSE 170.5 (23.7 %)	RMSE 179.7 (25.0 %)	RMSE 179.5 (24.9 %)	RMSE 163.9 (22.8 %)	RMSE 183.1 (25.4 %)
	CC 0.933	CC 0.933	CC 0.933	CC 0.935	CC 0.943	CC 0.935	CC 0.935	CC 0.935	CC 0.938	CC 0.946	CC 0.928
EFDC_ZA-Kru	MBE -95.7 (-7.8 %)	MBE -1.7 (-0.1 %)	MBE 119.3 (9.8 %)	MBE -34.7 (-2.8 %)	MBE -18.9 (-1.5 %)	MBE -66.4 (-5.4 %)	MBE 30.0 (2.5 %)	MBE 154.2 (12.6 %)	MBE -3.7 (-0.3 %)	MBE 10.1 (0.8 %)	MBE 30.9 (2.5 %)
NBDATA: 2167	STD 105.9 (8.7 %)	STD 110.7 (9.0 %)	STD 139.6 (11.4 %)	STD 99.3 (8.1 %)	STD 98.6 (8.1 %)	STD 101.3 (8.3 %)	STD 112.3 (9.2 %)	STD 147.9 (12.1 %)	STD 102.3 (8.4 %)	STD 99.7 (8.2 %)	STD 107.0 (8.7 %)
MEANREF: 1223.2	RMSE 142.8 (11.7 %)	RMSE 110.7 (9.0 %)	RMSE 183.7 (15.0 %)	RMSE 105.2 (8.6 %)	RMSE 100.4 (8.2 %)	RMSE 121.2 (9.9 %)	RMSE 116.3 (9.5 %)	RMSE 213.7 (17.5 %)	RMSE 102.3 (8.4 %)	RMSE 100.2 (8.2 %)	RMSE 111.3 (9.1 %)
	CC 0.982	CC 0.982	CC 0.982	CC 0.985	CC 0.986	CC 0.983	CC 0.983	CC 0.983	CC 0.986	CC 0.987	CC 0.984
Kishinev	MBE -97.2 (-10.1 %)	MBE -25.3 (-2.6 %)	MBE 67.2 (7.0 %)	MBE -64.1 (-6.7 %)	MBE -52.2 (-5.4 %)	MBE -110.1 (-11.5 %)	MBE -39.2 (-4.1 %)	MBE 51.9 (5.4 %)	MBE -77.8 (-8.1 %)	MBE -63.8 (-6.6 %)	MBE -49.2 (-5.1 %)
NBDATA: 73088	STD 129.3 (13.5 %)	STD 132.6 (13.8 %)	STD 155.7 (16.2 %)	STD 128.1 (13.3 %)	STD 120.8 (12.6 %)	STD 117.4 (12.2 %)	STD 114.0 (11.9 %)	STD 130.9 (13.6 %)	STD 111.2 (11.6 %)	STD 104.7 (10.9 %)	STD 120.3 (12.5 %)
MEANREF: 959.3	RMSE 161.7 (16.9 %)	RMSE 135.0 (14.1 %)	RMSE 169.5 (17.7 %)	RMSE 143.2 (14.9 %)	RMSE 131.6 (13.7 %)	RMSE 160.9 (16.8 %)	RMSE 120.6 (12.6 %)	RMSE 140.8 (14.7 %)	RMSE 135.7 (14.1 %)	RMSE 122.6 (12.8 %)	RMSE 130.0 (13.5 %)
	CC 0.972	CC 0.972	CC 0.972	CC 0.973	CC 0.976	CC 0.978	CC 0.978	CC 0.978	CC 0.979	CC 0.981	CC 0.975
Lugo	MBE -42.5 (-3.9 %)	MBE 43.7 (4.1 %)	MBE 154.6 (14.4 %)	MBE 4.6 (0.4 %)	MBE 14.4 (1.3 %)	MBE -58.4 (-5.4 %)	MBE 26.4 (2.5 %)	MBE 135.6 (12.6 %)	MBE -12.2 (-1.1 %)	MBE 1.7 (0.2 %)	MBE 7.9 (0.7 %)

NBDATA: 3854	STD 97.8 (9.1 %)	STD 111.5 (10.4 %)	STD 147.4 (13.7 %)	STD 104.6 (9.7 %)	STD 100.8 (9.4 %)	STD 87.9 (8.2 %)	STD 98.0 (9.1 %)	STD 132.2 (12.3 %)	STD 91.7 (8.5 %)	STD 89.3 (8.3 %)	STD 114.7 (10.7 %)
MEANREF: 1075.8	RMSE 106.6 (9.9 %)	RMSE 119.7 (11.1 %)	RMSE 213.6 (19.9 %)	RMSE 104.7 (9.7 %)	RMSE 101.8 (9.5 %)	RMSE 105.6 (9.8 %)	RMSE 101.5 (9.4 %)	RMSE 189.4 (17.6 %)	RMSE 92.5 (8.6 %)	RMSE 89.3 (8.3 %)	RMSE 115.0 (10.7 %)
	CC 0.983	CC 0.983	CC 0.983	CC 0.983	CC 0.985	CC 0.986	CC 0.986	CC 0.986	CC 0.986	CC 0.988	CC 0.977
PeronneSaintQuentin-tour2	MBE -40.1 (-4.7 %)	MBE 28.0 (3.3 %)	MBE 115.6 (13.5 %)	MBE -11.4 (-1.3 %)	MBE 1.4 (0.2 %)	MBE -47.0 (-5.5 %)	MBE 20.5 (2.4 %)	MBE 107.5 (12.5 %)	MBE -18.8 (-2.2 %)	MBE -5.4 (-0.6 %)	MBE 30.9 (3.6 %)
NBDATA: 18034	STD 116.9 (13.6 %)	STD 125.8 (14.7 %)	STD 153.7 (17.9 %)	STD 118.8 (13.9 %)	STD 116.0 (13.5 %)	STD 112.5 (13.1 %)	STD 117.0 (13.6 %)	STD 140.8 (16.4 %)	STD 110.5 (12.9 %)	STD 106.1 (12.4 %)	STD 123.2 (14.4 %)
MEANREF: 857.0	RMSE 123.6 (14.4 %)	RMSE 128.9 (15.0 %)	RMSE 192.3 (22.4 %)	RMSE 119.4 (13.9 %)	RMSE 116.0 (13.5 %)	RMSE 121.9 (14.2 %)	RMSE 118.8 (13.9 %)	RMSE 177.1 (20.7 %)	RMSE 112.1 (13.1 %)	RMSE 106.2 (12.4 %)	RMSE 127.0 (14.8 %)
	CC 0.973	CC 0.973	CC 0.973	CC 0.974	CC 0.976	CC 0.975	CC 0.975	CC 0.975	CC 0.976	CC 0.979	CC 0.971
Pokola	MBE -148.1 (-12.1 %)	MBE -58.6 (-4.8 %)	MBE 56.6 (4.6 %)	MBE -53.7 (-4.4 %)	MBE -37.7 (-3.1 %)	MBE -79.4 (-6.5 %)	MBE 15.8 (1.3 %)	MBE 138.5 (11.3 %)	MBE 20.9 (1.7 %)	MBE 30.1 (2.5 %)	MBE 54.5 (4.5 %)
NBDATA: 5829	STD 173.8 (14.2 %)	STD 170.5 (14.0 %)	STD 182.1 (14.9 %)	STD 167.1 (13.7 %)	STD 163.5 (13.4 %)	STD 141.5 (11.6 %)	STD 144.8 (11.9 %)	STD 168.5 (13.8 %)	STD 140.8 (11.5 %)	STD 136.0 (11.1 %)	STD 187.5 (15.3 %)
MEANREF: 1221.5	RMSE 228.4 (18.7 %)	RMSE 180.3 (14.8 %)	RMSE 190.7 (15.6 %)	RMSE 175.5 (14.4 %)	RMSE 167.8 (13.7 %)	RMSE 162.3 (13.3 %)	RMSE 145.7 (11.9 %)	RMSE 218.1 (17.9 %)	RMSE 142.4 (11.7 %)	RMSE 139.3 (11.4 %)	RMSE 195.2 (16.0 %)
	CC 0.956	CC 0.956	CC 0.956	CC 0.958	CC 0.960	CC 0.970	CC 0.970	CC 0.970	CC 0.972	CC 0.974	CC 0.949
Valenciennes	MBE -77.0 (-8.8 %)	MBE -10.3 (-1.2 %)	MBE 75.6 (8.6 %)	MBE -48.2 (-5.5 %)	MBE -38.9 (-4.4 %)	MBE -97.2 (-11.1 %)	MBE -32.2 (-3.7 %)	MBE 51.5 (5.9 %)	MBE -69.5 (-7.9 %)	MBE -56.4 (-6.4 %)	MBE -21.8 (-2.5 %)
NBDATA: 2897	STD 103.6 (11.8 %)	STD 108.6 (12.4 %)	STD 135.1 (15.4 %)	STD 102.1 (11.6 %)	STD 97.9 (11.2 %)	STD 100.8 (11.5 %)	STD 96.5 (11.0 %)	STD 113.5 (12.9 %)	STD 93.0 (10.6 %)	STD 87.6 (10.0 %)	STD 106.1 (12.1 %)
MEANREF: 876.8	RMSE 129.0 (14.7 %)	RMSE 109.1 (12.4 %)	RMSE 154.8 (17.7 %)	RMSE 112.9 (12.9 %)	RMSE 105.4 (12.0 %)	RMSE 140.0 (16.0 %)	RMSE 101.7 (11.6 %)	RMSE 124.6 (14.2 %)	RMSE 116.1 (13.2 %)	RMSE 104.2 (11.9 %)	RMSE 108.3 (12.4 %)
	CC 0.980	CC 0.980	CC 0.980	CC 0.981	CC 0.983	CC 0.983	CC 0.983	CC 0.983	CC 0.984	CC 0.986	CC 0.979
Villaviciosa	MBE -69.1 (-6.6 %)	MBE 12.0 (1.2 %)	MBE 116.3 (11.2 %)	MBE -23.0 (-2.2 %)	MBE -13.3 (-1.3 %)	MBE -69.7 (-6.7 %)	MBE 11.3 (1.1 %)	MBE 115.6 (11.1 %)	MBE -23.8 (-2.3 %)	MBE -9.3 (-0.9 %)	MBE -18.7 (-1.8 %)
NBDATA: 4384	STD 145.4 (14.0 %)	STD 156.5 (15.0 %)	STD 183.5 (17.6 %)	STD 150.6 (14.5 %)	STD 143.3 (13.8 %)	STD 109.8 (10.5 %)	STD 118.2 (11.3 %)	STD 145.3 (14.0 %)	STD 112.7 (10.8 %)	STD 108.0 (10.4 %)	STD 149.6 (14.4 %)
MEANREF: 1041.1	RMSE 160.9 (15.5 %)	RMSE 156.9 (15.1 %)	RMSE 217.3 (20.9 %)	RMSE 152.4 (14.6 %)	RMSE 144.0 (13.8 %)	RMSE 130.1 (12.5 %)	RMSE 118.7 (11.4 %)	RMSE 185.7 (17.8 %)	RMSE 115.2 (11.1 %)	RMSE 108.4 (10.4 %)	RMSE 150.7 (14.5 %)
	CC 0.956	CC 0.956	CC 0.956	CC 0.957	CC 0.961	CC 0.974	CC 0.974	CC 0.974	CC 0.975	CC 0.978	CC 0.953
Vitoria	MBE -68.0 (-6.3 %)	MBE 16.9 (1.6 %)	MBE 126.1 (11.6 %)	MBE -24.6 (-2.3 %)	MBE -11.2 (-1.0 %)	MBE -79.3 (-7.3 %)	MBE 4.6 (0.4 %)	MBE 112.6 (10.4 %)	MBE -36.6 (-3.4 %)	MBE -23.3 (-2.1 %)	MBE -13.1 (-1.2 %)
NBDATA: 5016	STD 90.0 (8.3 %)	STD 99.7 (9.2 %)	STD 133.1 (12.3 %)	STD 93.8 (8.6 %)	STD 93.7 (8.6 %)	STD 88.7 (8.2 %)	STD 97.7 (9.0 %)	STD 130.7 (12.0 %)	STD 91.5 (8.4 %)	STD 90.0 (8.3 %)	STD 113.7 (10.5 %)

MEANREF: 1085.4	RMSE 112.8 (10.4 %)	RMSE 101.1 (9.3 %)	RMSE 183.3 (16.9 %)	RMSE 97.0 (8.9 %)	RMSE 94.4 (8.7 %)	RMSE 119.0 (11.0 %)	RMSE 97.8 (9.0 %)	RMSE 172.5 (15.9 %)	RMSE 98.5 (9.1 %)	RMSE 93.0 (8.6 %)	RMSE 114.4 (10.5 %)
	CC 0.985	CC 0.985	CC 0.985	CC 0.985	CC 0.986	CC 0.985	CC 0.985	CC 0.985	CC 0.986	CC 0.987	CC 0.977
Zaragoza	MBE -67.7 (-6.6 %)	MBE 12.7 (1.2 %)	MBE 116.2 (11.3 %)	MBE -25.3 (-2.5 %)	MBE -13.4 (-1.3 %)	MBE -55.4 (-5.4 %)	MBE 26.0 (2.5 %)	MBE 130.9 (12.7 %)	MBE -12.6 (-1.2 %)	MBE -1.4 (-0.1 %)	MBE 22.1 (2.1 %)
NBDATA: 7525	STD 68.6 (6.6 %)	STD 81.0 (7.8 %)	STD 121.7 (11.8 %)	STD 74.1 (7.2 %)	STD 76.5 (7.4 %)	STD 69.8 (6.8 %)	STD 83.5 (8.1 %)	STD 124.8 (12.1 %)	STD 76.4 (7.4 %)	STD 77.0 (7.5 %)	STD 74.4 (7.2 %)
MEANREF: 1032.1	RMSE 96.4 (9.3 %)	RMSE 82.0 (7.9 %)	RMSE 168.2 (16.3 %)	RMSE 78.3 (7.6 %)	RMSE 77.7 (7.5 %)	RMSE 89.2 (8.6 %)	RMSE 87.5 (8.5 %)	RMSE 180.9 (17.5 %)	RMSE 77.4 (7.5 %)	RMSE 77.1 (7.5 %)	RMSE 77.6 (7.5 %)
	CC 0.992	CC 0.992	CC 0.992	CC 0.992	CC 0.992	CC 0.992	CC 0.992	CC 0.992	CC 0.992	CC 0.992	CC 0.992

Table S2: Validation results for the comparison between the 11 methods to estimate PAR from satellite imagery at the 33 in-situ stations in cloud-free conditions (PAR CMF > 0.8)

# Quality assessment of 11 methods to derive 30-min PAR [400-700] nm from satellite imagery in overcast conditions											
# Author - date	Dr Claire THOMAS – Date of generation of the results : June 2022										
# Method 1 (M1)	Jacovides (2004) from HC3 (coeff 1.919)										
# Method 2 (M2)	Udo et Aro (1999) from HC3 (coeff 2.079)										
# Method 3 (M3)	Szeicz (1974) from HC3 (coeff 2.285)										
# Method 4 (M4)	Weighted Kato with BB CMF from HC3										
# Method 5 (M5)	Weighted Kato with PAR CMF from HC3										
# Method 6 (M6)	Jacovides (2004) from CAMS (coeff 1.919)										
# Method 7 (M7)	Udo et Aro (1999) from CAMS (coeff 2.079)										
# Method 8 (M8)	Szeicz (1974) from CAMS (coeff 2.285)										
# Method 9 (M9)	Weighted Kato with BB CMF from CAMS										
# Method 10 (M10)	Weighted Kato with PAR CMF from CAMS										
# Method 11 (M11)	DWD SARAH-3										
# MBE	Bias in µmol/m2/s (relative bias in percent) - ideal 0										
# STD	STandard Deviation in µmol/m2/s (relative standard deviation in percent) - ideal 0										
# RMSE	Root Mean Square Error in µmol/m2/s (relative Root Mean Square Error in percent) - ideal 0										
# CC	Correlation Coefficient - ideal 1										
# Station	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11
Aberystwyth_University	MBE 59.2 (35.9 %)	MBE 77.9 (47.2 %)	MBE 102.0 (61.8 %)	MBE 71.5 (43.4 %)	MBE 107.7 (65.3 %)	MBE 86.9 (52.7 %)	MBE 107.9 (65.4 %)	MBE 134.9 (81.8 %)	MBE 101.3 (61.4 %)	MBE 139.7 (84.7 %)	MBE 97.9 (59.4 %)
NBDATA: 9459	STD 75.9 (46.0 %)	STD 81.3 (49.3 %)	STD 89.1 (54.0 %)	STD 79.6 (48.3 %)	STD 85.5 (51.9 %)	STD 117.4 (71.2 %)	STD 130.5 (79.1 %)	STD 147.9 (89.7 %)	STD 127.9 (77.5 %)	STD 144.7 (87.8 %)	STD 104.0 (63.0 %)
MEANREF: 164.9	RMSE 96.3 (58.4 %)	RMSE 112.6 (68.3 %)	RMSE 135.5 (82.1 %)	RMSE 107.0 (64.9 %)	RMSE 137.5 (83.4 %)	RMSE 146.1 (88.6 %)	RMSE 169.3 (102.7 %)	RMSE 200.2 (121.4 %)	RMSE 163.1 (98.9 %)	RMSE 201.1 (122.0 %)	RMSE 142.8 (86.6 %)
	CC 0.744	CC 0.744	CC 0.744	CC 0.747	CC 0.756	CC 0.794	CC 0.794	CC 0.794	CC 0.793	CC 0.804	CC 0.715
Abbotts_Hall	MBE 21.7 (12.0 %)	MBE 38.6 (21.3 %)	MBE 60.4 (33.3 %)	MBE 31.8 (17.5 %)	MBE 64.0 (35.3 %)	MBE 83.2 (45.9 %)	MBE 105.2 (58.0 %)	MBE 133.6 (73.7 %)	MBE 97.1 (53.5 %)	MBE 136.9 (75.5 %)	MBE 96.6 (53.3 %)
NBDATA: 2162	STD 84.2 (46.4 %)	STD 88.0 (48.5 %)	STD 93.7 (51.7 %)	STD 86.4 (47.6 %)	STD 86.4 (47.6 %)	STD 125.9 (69.4 %)	STD 139.7 (77.0 %)	STD 157.9 (87.1 %)	STD 135.9 (75.0 %)	STD 151.0 (83.3 %)	STD 143.1 (78.9 %)

MEANREF: 181.3	RMSE 86.9 (48.0 %)	RMSE 96.1 (53.0 %)	RMSE 111.5 (61.5 %)	RMSE 92.0 (50.8 %)	RMSE 107.5 (59.3 %)	RMSE 150.9 (83.2 %)	RMSE 174.9 (96.4 %)	RMSE 206.9 (114.1 %)	RMSE 167.0 (92.1 %)	RMSE 203.8 (112.4 %)	RMSE 172.6 (95.2 %)
	CC 0.656	CC 0.656	CC 0.656	CC 0.662	CC 0.690	CC 0.781	CC 0.781	CC 0.781	CC 0.783	CC 0.801	CC 0.650
Albacete	MBE 195.7 (94.6 %)	MBE 229.2 (110.8 %)	MBE 272.5 (131.7 %)	MBE 211.2 (102.1 %)	MBE 268.5 (129.8 %)	MBE 161.9 (78.3 %)	MBE 192.7 (93.1 %)	MBE 232.3 (112.3 %)	MBE 176.5 (85.3 %)	MBE 226.2 (109.3 %)	MBE 178.7 (86.3 %)
NBDATA: 821	STD 187.6 (90.6 %)	STD 206.6 (99.8 %)	STD 231.6 (111.9 %)	STD 197.0 (95.2 %)	STD 199.9 (96.6 %)	STD 206.6 (99.8 %)	STD 228.3 (110.3 %)	STD 256.7 (124.1 %)	STD 218.0 (105.4 %)	STD 230.9 (111.6 %)	STD 227.7 (110.0 %)
MEANREF: 206.9	RMSE 271.1 (131.0 %)	RMSE 308.6 (149.1 %)	RMSE 357.6 (172.8 %)	RMSE 288.8 (139.6 %)	RMSE 334.8 (161.8 %)	RMSE 262.5 (126.9 %)	RMSE 298.8 (144.4 %)	RMSE 346.2 (167.3 %)	RMSE 280.6 (135.6 %)	RMSE 323.3 (156.2 %)	RMSE 289.4 (139.8 %)
	CC 0.708	CC 0.708	CC 0.708	CC 0.712	CC 0.740	CC 0.746	CC 0.746	CC 0.746	CC 0.748	CC 0.770	CC 0.650
Cordoba	MBE 135.8 (71.7 %)	MBE 162.9 (86.0 %)	MBE 197.8 (104.4 %)	MBE 151.8 (80.2 %)	MBE 207.4 (109.5 %)	MBE 97.9 (51.7 %)	MBE 121.9 (64.3 %)	MBE 152.7 (80.6 %)	MBE 111.9 (59.1 %)	MBE 157.5 (83.1 %)	MBE 116.3 (61.4 %)
NBDATA: 684	STD 97.0 (51.2 %)	STD 104.7 (55.3 %)	STD 115.4 (60.9 %)	STD 101.6 (53.6 %)	STD 107.4 (56.7 %)	STD 147.0 (77.6 %)	STD 162.4 (85.7 %)	STD 182.6 (96.4 %)	STD 155.5 (82.1 %)	STD 175.7 (92.8 %)	STD 119.3 (63.0 %)
MEANREF: 189.4	RMSE 166.8 (88.1 %)	RMSE 193.6 (102.2 %)	RMSE 229.0 (120.9 %)	RMSE 182.7 (96.4 %)	RMSE 233.5 (123.3 %)	RMSE 176.6 (93.3 %)	RMSE 203.0 (107.2 %)	RMSE 238.0 (125.6 %)	RMSE 191.6 (101.2 %)	RMSE 236.0 (124.6 %)	RMSE 166.6 (88.0 %)
	CC 0.683	CC 0.683	CC 0.683	CC 0.685	CC 0.707	CC 0.738	CC 0.738	CC 0.738	CC 0.741	CC 0.758	CC 0.639
Czech_BKF_SF	MBE 85.7 (49.3 %)	MBE 107.3 (61.8 %)	MBE 135.1 (77.8 %)	MBE 93.1 (53.6 %)	MBE 132.2 (76.1 %)	MBE 140.2 (80.7 %)	MBE 166.4 (95.8 %)	MBE 200.1 (115.2 %)	MBE 150.5 (86.6 %)	MBE 196.0 (112.8 %)	MBE 107.3 (61.8 %)
NBDATA: 21412	STD 122.2 (70.3 %)	STD 131.6 (75.7 %)	STD 144.4 (83.1 %)	STD 125.6 (72.3 %)	STD 130.5 (75.1 %)	STD 154.6 (89.0 %)	STD 170.4 (98.1 %)	STD 191.2 (110.1 %)	STD 163.1 (93.9 %)	STD 177.9 (102.4 %)	STD 127.3 (73.3 %)
MEANREF: 173.7	RMSE 149.2 (85.9 %)	RMSE 169.8 (97.7 %)	RMSE 197.8 (113.8 %)	RMSE 156.3 (90.0 %)	RMSE 185.8 (106.9 %)	RMSE 208.7 (120.1 %)	RMSE 238.1 (137.1 %)	RMSE 276.8 (159.3 %)	RMSE 221.9 (127.8 %)	RMSE 264.7 (152.4 %)	RMSE 166.5 (95.8 %)
	CC 0.604	CC 0.604	CC 0.604	CC 0.612	CC 0.633	CC 0.721	CC 0.721	CC 0.721	CC 0.722	CC 0.739	CC 0.695
Czech_BKF_ST	MBE 88.1 (53.0 %)	MBE 109.3 (65.7 %)	MBE 136.6 (82.2 %)	MBE 94.5 (56.8 %)	MBE 133.6 (80.4 %)	MBE 125.1 (75.3 %)	MBE 149.4 (89.9 %)	MBE 180.7 (108.7 %)	MBE 133.9 (80.5 %)	MBE 176.2 (106.0 %)	MBE 105.3 (63.3 %)
NBDATA: 25415	STD 113.6 (68.3 %)	STD 122.3 (73.5 %)	STD 134.2 (80.7 %)	STD 116.7 (70.2 %)	STD 122.0 (73.4 %)	STD 150.1 (90.2 %)	STD 165.5 (99.6 %)	STD 185.9 (111.8 %)	STD 158.3 (95.2 %)	STD 173.8 (104.5 %)	STD 119.9 (72.1 %)
MEANREF: 166.3	RMSE 143.8 (86.5 %)	RMSE 164.0 (98.6 %)	RMSE 191.5 (115.2 %)	RMSE 150.1 (90.3 %)	RMSE 180.9 (108.8 %)	RMSE 195.4 (117.5 %)	RMSE 223.0 (134.1 %)	RMSE 259.3 (155.9 %)	RMSE 207.4 (124.7 %)	RMSE 247.5 (148.8 %)	RMSE 159.5 (96.0 %)

	CC 0.616	CC 0.616	CC 0.616	CC 0.625	CC 0.643	CC 0.728	CC 0.728	CC 0.728	CC 0.730	CC 0.747	CC 0.699
Czech_BKG	MBE 89.8 (51.7 %)	MBE 111.8 (64.3 %)	MBE 140.1 (80.6 %)	MBE 97.1 (55.9 %)	MBE 135.8 (78.1 %)	MBE 136.2 (78.4 %)	MBE 162.0 (93.2 %)	MBE 195.3 (112.4 %)	MBE 146.1 (84.1 %)	MBE 190.0 (109.3 %)	MBE 117.2 (67.5 %)
NBDATA: 22108	STD 137.3 (79.0 %)	STD 148.1 (85.2 %)	STD 162.6 (93.6 %)	STD 141.7 (81.5 %)	STD 144.6 (83.2 %)	STD 162.0 (93.2 %)	STD 178.3 (102.6 %)	STD 199.8 (115.0 %)	STD 170.7 (98.3 %)	STD 184.3 (106.1 %)	STD 140.4 (80.8 %)
MEANREF: 173.8	RMSE 164.1 (94.4 %)	RMSE 185.6 (106.8 %)	RMSE 214.6 (123.5 %)	RMSE 171.8 (98.8 %)	RMSE 198.3 (114.1 %)	RMSE 211.6 (121.8 %)	RMSE 240.9 (138.7 %)	RMSE 279.4 (160.8 %)	RMSE 224.7 (129.3 %)	RMSE 264.7 (152.3 %)	RMSE 182.9 (105.2 %)
	CC 0.551	CC 0.551	CC 0.551	CC 0.560	CC 0.583	CC 0.705	CC 0.705	CC 0.705	CC 0.707	CC 0.727	CC 0.656
Czech_KRP	MBE 55.9 (32.2 %)	MBE 75.1 (43.2 %)	MBE 99.8 (57.4 %)	MBE 62.2 (35.8 %)	MBE 100.4 (57.7 %)	MBE 87.4 (50.3 %)	MBE 109.2 (62.8 %)	MBE 137.2 (78.9 %)	MBE 95.5 (54.9 %)	MBE 136.2 (78.3 %)	MBE 78.0 (44.9 %)
NBDATA: 10819	STD 84.6 (48.6 %)	STD 88.9 (51.1 %)	STD 95.4 (54.9 %)	STD 85.9 (49.4 %)	STD 89.3 (51.4 %)	STD 128.1 (73.7 %)	STD 141.3 (81.2 %)	STD 158.8 (91.3 %)	STD 135.3 (77.8 %)	STD 151.0 (86.9 %)	STD 106.8 (61.4 %)
MEANREF: 173.9	RMSE 101.4 (58.3 %)	RMSE 116.4 (66.9 %)	RMSE 138.1 (79.4 %)	RMSE 106.1 (61.0 %)	RMSE 134.4 (77.3 %)	RMSE 155.1 (89.2 %)	RMSE 178.5 (102.7 %)	RMSE 209.9 (120.7 %)	RMSE 165.6 (95.3 %)	RMSE 203.4 (116.9 %)	RMSE 132.3 (76.1 %)
	CC 0.675	CC 0.675	CC 0.675	CC 0.685	CC 0.707	CC 0.741	CC 0.741	CC 0.741	CC 0.744	CC 0.766	CC 0.696
Czech_LNZ	MBE 27.4 (16.3 %)	MBE 43.6 (26.0 %)	MBE 64.6 (38.5 %)	MBE 33.7 (20.1 %)	MBE 66.5 (39.7 %)	MBE 73.8 (44.1 %)	MBE 93.9 (56.1 %)	MBE 119.8 (71.5 %)	MBE 82.8 (49.4 %)	MBE 120.7 (72.1 %)	MBE 74.5 (44.5 %)
NBDATA: 7809	STD 79.0 (47.2 %)	STD 81.9 (48.9 %)	STD 86.5 (51.7 %)	STD 79.3 (47.3 %)	STD 79.7 (47.6 %)	STD 121.5 (72.5 %)	STD 134.2 (80.1 %)	STD 151.1 (90.2 %)	STD 129.1 (77.1 %)	STD 144.6 (86.3 %)	STD 93.1 (55.6 %)
MEANREF: 167.5	RMSE 83.6 (49.9 %)	RMSE 92.8 (55.4 %)	RMSE 107.9 (64.4 %)	RMSE 86.2 (51.4 %)	RMSE 103.8 (62.0 %)	RMSE 142.2 (84.9 %)	RMSE 163.8 (97.8 %)	RMSE 192.8 (115.1 %)	RMSE 153.4 (91.6 %)	RMSE 188.4 (112.5 %)	RMSE 119.2 (71.2 %)
	CC 0.667	CC 0.667	CC 0.667	CC 0.681	CC 0.708	CC 0.753	CC 0.753	CC 0.753	CC 0.758	CC 0.781	CC 0.737
Czech_RAJ	MBE 63.5 (37.2 %)	MBE 83.0 (48.7 %)	MBE 108.2 (63.4 %)	MBE 70.2 (41.1 %)	MBE 106.1 (62.2 %)	MBE 106.2 (62.2 %)	MBE 129.3 (75.8 %)	MBE 159.0 (93.2 %)	MBE 115.2 (67.5 %)	MBE 155.3 (91.0 %)	MBE 110.0 (64.5 %)
NBDATA: 14121	STD 109.3 (64.1 %)	STD 116.9 (68.5 %)	STD 127.5 (74.7 %)	STD 112.4 (65.9 %)	STD 115.7 (67.8 %)	STD 145.2 (85.1 %)	STD 160.3 (94.0 %)	STD 180.2 (105.6 %)	STD 153.5 (90.0 %)	STD 168.1 (98.5 %)	STD 143.8 (84.3 %)
MEANREF: 170.6	RMSE 126.4 (74.1 %)	RMSE 143.4 (84.0 %)	RMSE 167.2 (98.0 %)	RMSE 132.5 (77.7 %)	RMSE 157.0 (92.0 %)	RMSE 179.9 (105.4 %)	RMSE 205.9 (120.7 %)	RMSE 240.3 (140.8 %)	RMSE 192.0 (112.5 %)	RMSE 228.8 (134.1 %)	RMSE 181.1 (106.1 %)
	CC 0.599	CC 0.599	CC 0.599	CC 0.609	CC 0.635	CC 0.737	CC 0.737	CC 0.737	CC 0.740	CC 0.763	CC 0.654
Czech_STI	MBE 50.7 (30.3 %)	MBE 68.9 (41.1 %)	MBE 92.3 (55.1 %)	MBE 57.1 (34.1 %)	MBE 91.3 (54.5 %)	MBE 109.3 (65.3 %)	MBE 132.4 (79.1 %)	MBE 162.1 (96.9 %)	MBE 118.8 (71.0 %)	MBE 159.9 (95.5 %)	MBE 128.0 (76.5 %)

NBDATA: 17497	STD 105.5 (63.1 %)	STD 112.7 (67.4 %)	STD 122.8 (73.4 %)	STD 108.4 (64.7 %)	STD 110.9 (66.3 %)	STD 150.4 (89.9 %)	STD 165.9 (99.2 %)	STD 186.4 (111.4 %)	STD 159.3 (95.2 %)	STD 175.5 (104.9 %)	STD 167.8 (100.3 %)
MEANREF: 167.4	RMSE 117.1 (70.0 %)	RMSE 132.1 (78.9 %)	RMSE 153.6 (91.8 %)	RMSE 122.5 (73.2 %)	RMSE 143.6 (85.8 %)	RMSE 185.9 (111.1 %)	RMSE 212.3 (126.9 %)	RMSE 247.0 (147.6 %)	RMSE 198.7 (118.8 %)	RMSE 237.4 (141.9 %)	RMSE 211.1 (126.1 %)
	CC 0.605	CC 0.605	CC 0.605	CC 0.614	CC 0.639	CC 0.730	CC 0.730	CC 0.730	CC 0.733	CC 0.751	CC 0.648
Czech_TRE	MBE 43.7 (25.0 %)	MBE 61.9 (35.4 %)	MBE 85.4 (48.9 %)	MBE 50.2 (28.7 %)	MBE 85.7 (49.1 %)	MBE 88.4 (50.6 %)	MBE 110.4 (63.1 %)	MBE 138.6 (79.3 %)	MBE 97.5 (55.8 %)	MBE 137.7 (78.8 %)	MBE 81.8 (46.8 %)
NBDATA: 21499	STD 87.7 (50.2 %)	STD 91.4 (52.3 %)	STD 97.0 (55.5 %)	STD 88.5 (50.7 %)	STD 89.3 (51.1 %)	STD 131.1 (75.0 %)	STD 144.6 (82.8 %)	STD 162.6 (93.0 %)	STD 138.9 (79.5 %)	STD 154.4 (88.3 %)	STD 118.7 (67.9 %)
MEANREF: 174.7	RMSE 98.0 (56.1 %)	RMSE 110.4 (63.2 %)	RMSE 129.2 (74.0 %)	RMSE 101.8 (58.2 %)	RMSE 123.8 (70.8 %)	RMSE 158.1 (90.5 %)	RMSE 181.9 (104.1 %)	RMSE 213.7 (122.3 %)	RMSE 169.7 (97.1 %)	RMSE 206.9 (118.4 %)	RMSE 144.2 (82.5 %)
	CC 0.631	CC 0.631	CC 0.631	CC 0.644	CC 0.673	CC 0.742	CC 0.742	CC 0.742	CC 0.746	CC 0.769	CC 0.658
EFDC_DE-Hai	MBE 59.9 (31.9 %)	MBE 80.6 (42.9 %)	MBE 107.2 (57.1 %)	MBE 67.9 (36.2 %)	MBE 105.9 (56.4 %)	MBE 114.7 (61.1 %)	MBE 139.9 (74.6 %)	MBE 172.3 (91.9 %)	MBE 125.7 (67.0 %)	MBE 169.8 (90.5 %)	MBE 114.3 (60.9 %)
NBDATA: 18917	STD 107.4 (57.2 %)	STD 113.9 (60.7 %)	STD 123.0 (65.6 %)	STD 109.1 (58.1 %)	STD 112.2 (59.8 %)	STD 145.0 (77.3 %)	STD 159.9 (85.2 %)	STD 179.6 (95.7 %)	STD 153.1 (81.6 %)	STD 167.2 (89.1 %)	STD 139.8 (74.5 %)
MEANREF: 187.6	RMSE 123.0 (65.6 %)	RMSE 139.5 (74.4 %)	RMSE 163.2 (87.0 %)	RMSE 128.5 (68.5 %)	RMSE 154.3 (82.2 %)	RMSE 184.8 (98.5 %)	RMSE 212.4 (113.2 %)	RMSE 248.9 (132.7 %)	RMSE 198.1 (105.6 %)	RMSE 238.3 (127.0 %)	RMSE 180.6 (96.3 %)
	CC 0.572	CC 0.572	CC 0.572	CC 0.584	CC 0.604	CC 0.732	CC 0.732	CC 0.732	CC 0.734	CC 0.756	CC 0.654
EFDC_FR-Aur	MBE 78.4 (41.0 %)	MBE 100.8 (52.7 %)	MBE 129.8 (67.9 %)	MBE 89.9 (47.0 %)	MBE 135.8 (71.0 %)	MBE 95.4 (49.9 %)	MBE 119.3 (62.4 %)	MBE 150.1 (78.4 %)	MBE 108.0 (56.4 %)	MBE 153.6 (80.3 %)	MBE 118.1 (61.7 %)
NBDATA: 16214	STD 95.4 (49.9 %)	STD 102.0 (53.4 %)	STD 111.6 (58.3 %)	STD 99.7 (52.1 %)	STD 103.2 (54.0 %)	STD 149.2 (78.0 %)	STD 164.7 (86.1 %)	STD 185.2 (96.8 %)	STD 158.1 (82.6 %)	STD 175.4 (91.7 %)	STD 144.8 (75.7 %)
MEANREF: 191.3	RMSE 123.5 (64.6 %)	RMSE 143.5 (75.0 %)	RMSE 171.1 (89.5 %)	RMSE 134.3 (70.2 %)	RMSE 170.6 (89.2 %)	RMSE 177.1 (92.5 %)	RMSE 203.3 (106.3 %)	RMSE 238.3 (124.6 %)	RMSE 191.4 (100.1 %)	RMSE 233.1 (121.8 %)	RMSE 186.8 (97.6 %)
	CC 0.705	CC 0.705	CC 0.705	CC 0.708	CC 0.734	CC 0.740	CC 0.740	CC 0.740	CC 0.744	CC 0.767	CC 0.619
EFDC_FR-Pue	MBE 139.3 (79.1 %)	MBE 165.6 (94.0 %)	MBE 199.5 (113.3 %)	MBE 153.5 (87.1 %)	MBE 206.1 (117.0 %)	MBE 119.5 (67.8 %)	MBE 144.1 (81.8 %)	MBE 175.9 (99.9 %)	MBE 133.1 (75.6 %)	MBE 178.4 (101.3 %)	MBE 113.2 (64.3 %)
NBDATA: 12100	STD 112.1 (63.7 %)	STD 121.8 (69.2 %)	STD 135.1 (76.7 %)	STD 118.2 (67.1 %)	STD 122.4 (69.5 %)	STD 160.6 (91.2 %)	STD 176.7 (100.3 %)	STD 198.1 (112.4 %)	STD 170.6 (96.8 %)	STD 184.4 (104.7 %)	STD 136.8 (77.6 %)

MEANREF: 176.1	RMSE 178.8 (101.5 %)	RMSE 205.6 (116.7 %)	RMSE 240.9 (136.8 %)	RMSE 193.7 (110.0 %)	RMSE 239.7 (136.1 %)	RMSE 200.1 (113.6 %)	RMSE 228.1 (129.5 %)	RMSE 264.9 (150.4 %)	RMSE 216.4 (122.8 %)	RMSE 256.6 (145.7 %)	RMSE 177.5 (100.8 %)
	CC 0.689	CC 0.689	CC 0.689	CC 0.692	CC 0.711	CC 0.706	CC 0.706	CC 0.706	CC 0.708	CC 0.728	CC 0.646
EFDC_GF-Guy	MBE 106.3 (40.0 %)	MBE 137.2 (51.7 %)	MBE 177.1 (66.7 %)	MBE 147.2 (55.5 %)	MBE 188.4 (71.0 %)	MBE 250.0 (94.2 %)	MBE 293.0 (110.4 %)	MBE 348.3 (131.2 %)	MBE 306.9 (115.6 %)	MBE 371.4 (139.9 %)	MBE 292.7 (110.3 %)
NBDATA: 6534	STD 296.7 (111.8 %)	STD 322.4 (121.5 %)	STD 356.1 (134.2 %)	STD 330.0 (124.3 %)	STD 337.3 (127.1 %)	STD 264.3 (99.6 %)	STD 290.3 (109.4 %)	STD 324.2 (122.1 %)	STD 297.2 (112.0 %)	STD 305.1 (114.9 %)	STD 383.6 (144.5 %)
MEANREF: 265.4	RMSE 315.1 (118.7 %)	RMSE 350.4 (132.0 %)	RMSE 397.7 (149.8 %)	RMSE 361.3 (136.1 %)	RMSE 386.3 (145.6 %)	RMSE 363.9 (137.1 %)	RMSE 412.4 (155.4 %)	RMSE 475.9 (179.3 %)	RMSE 427.2 (160.9 %)	RMSE 480.7 (181.1 %)	RMSE 482.5 (181.8 %)
	CC 0.490	CC 0.490	CC 0.490	CC 0.487	CC 0.516	CC 0.667	CC 0.667	CC 0.667	CC 0.665	CC 0.704	CC 0.652
EFDC_IE-Dri	MBE 98.5 (52.3 %)	MBE 122.4 (65.0 %)	MBE 153.1 (81.4 %)	MBE 111.3 (59.2 %)	MBE 153.1 (81.4 %)	MBE 128.1 (68.0 %)	MBE 154.5 (82.0 %)	MBE 188.4 (100.1 %)	MBE 142.8 (75.8 %)	MBE 185.4 (98.5 %)	MBE 137.2 (72.9 %)
NBDATA: 9860	STD 115.7 (61.5 %)	STD 127.1 (67.6 %)	STD 142.6 (75.8 %)	STD 121.3 (64.5 %)	STD 131.1 (69.7 %)	STD 166.0 (88.2 %)	STD 184.2 (97.8 %)	STD 208.1 (110.5 %)	STD 176.4 (93.7 %)	STD 191.5 (101.7 %)	STD 163.4 (86.8 %)
MEANREF: 188.1	RMSE 152.0 (80.8 %)	RMSE 176.5 (93.8 %)	RMSE 209.3 (111.2 %)	RMSE 164.7 (87.5 %)	RMSE 201.6 (107.2 %)	RMSE 209.7 (111.4 %)	RMSE 240.4 (127.7 %)	RMSE 280.7 (149.1 %)	RMSE 227.0 (120.5 %)	RMSE 266.5 (141.5 %)	RMSE 213.4 (113.3 %)
	CC 0.751	CC 0.751	CC 0.751	CC 0.756	CC 0.770	CC 0.780	CC 0.780	CC 0.780	CC 0.783	CC 0.803	CC 0.708
EFDC_IL-Yat	MBE 93.3 (48.4 %)	MBE 117.2 (60.7 %)	MBE 147.9 (76.7 %)	MBE 100.8 (52.2 %)	MBE 156.4 (81.1 %)	MBE 91.5 (47.4 %)	MBE 115.2 (59.7 %)	MBE 145.8 (75.5 %)	MBE 98.8 (51.2 %)	MBE 150.4 (77.9 %)	MBE 216.8 (112.4 %)
NBDATA: 3651	STD 112.1 (58.1 %)	STD 121.6 (63.0 %)	STD 134.6 (69.7 %)	STD 115.5 (59.8 %)	STD 127.7 (66.2 %)	STD 148.3 (76.8 %)	STD 161.4 (83.6 %)	STD 178.8 (92.7 %)	STD 152.3 (78.9 %)	STD 167.8 (87.0 %)	STD 198.4 (102.8 %)
MEANREF: 193.0	RMSE 145.8 (75.6 %)	RMSE 168.9 (87.5 %)	RMSE 200.0 (103.6 %)	RMSE 153.3 (79.4 %)	RMSE 201.9 (104.6 %)	RMSE 174.2 (90.3 %)	RMSE 198.3 (102.7 %)	RMSE 230.7 (119.5 %)	RMSE 181.6 (94.1 %)	RMSE 225.4 (116.8 %)	RMSE 293.9 (152.3 %)
	CC 0.679	CC 0.679	CC 0.679	CC 0.681	CC 0.709	CC 0.610	CC 0.610	CC 0.610	CC 0.614	CC 0.644	CC 0.681
EFDC_IT-Bci	MBE 112.1 (64.1 %)	MBE 136.0 (77.8 %)	MBE 166.8 (95.4 %)	MBE 123.6 (70.7 %)	MBE 170.7 (97.7 %)	MBE 102.1 (58.4 %)	MBE 125.2 (71.6 %)	MBE 154.9 (88.7 %)	MBE 113.5 (65.0 %)	MBE 156.3 (89.4 %)	MBE 120.7 (69.0 %)
NBDATA: 6885	STD 114.3 (65.4 %)	STD 123.6 (70.8 %)	STD 136.3 (78.0 %)	STD 119.5 (68.4 %)	STD 124.1 (71.0 %)	STD 138.3 (79.1 %)	STD 152.8 (87.4 %)	STD 172.0 (98.4 %)	STD 146.7 (83.9 %)	STD 159.4 (91.2 %)	STD 146.6 (83.9 %)
MEANREF: 174.7	RMSE 160.1 (91.6 %)	RMSE 183.8 (105.2 %)	RMSE 215.4 (123.3 %)	RMSE 171.9 (98.4 %)	RMSE 211.0 (120.8 %)	RMSE 171.9 (98.4 %)	RMSE 197.5 (113.0 %)	RMSE 231.4 (132.4 %)	RMSE 185.5 (106.1 %)	RMSE 223.2 (127.8 %)	RMSE 189.8 (108.6 %)

	CC 0.631	CC 0.631	CC 0.631	CC 0.633	CC 0.652	CC 0.746	CC 0.746	CC 0.746	CC 0.747	CC 0.770	CC 0.626
EFDC_IT-Noe	MBE 98.3 (53.9 %)	MBE 121.7 (66.8 %)	MBE 151.9 (83.3 %)	MBE 110.7 (60.7 %)	MBE 153.3 (84.1 %)	MBE 119.1 (65.3 %)	MBE 144.3 (79.1 %)	MBE 176.6 (96.9 %)	MBE 132.9 (72.9 %)	MBE 176.5 (96.8 %)	MBE 114.7 (62.9 %)
NBDATA: 2554	STD 120.0 (65.8 %)	STD 129.3 (70.9 %)	STD 141.9 (77.8 %)	STD 125.7 (68.9 %)	STD 125.9 (69.0 %)	STD 150.1 (82.3 %)	STD 165.2 (90.6 %)	STD 185.1 (101.5 %)	STD 159.5 (87.5 %)	STD 170.3 (93.4 %)	STD 132.3 (72.6 %)
MEANREF: 182.3	RMSE 155.1 (85.1 %)	RMSE 177.6 (97.4 %)	RMSE 207.9 (114.0 %)	RMSE 167.5 (91.9 %)	RMSE 198.3 (108.8 %)	RMSE 191.6 (105.1 %)	RMSE 219.3 (120.3 %)	RMSE 255.8 (140.3 %)	RMSE 207.6 (113.9 %)	RMSE 245.2 (134.5 %)	RMSE 175.1 (96.1 %)
	CC 0.590	CC 0.590	CC 0.590	CC 0.594	CC 0.626	CC 0.704	CC 0.704	CC 0.704	CC 0.708	CC 0.735	CC 0.612
EFDC_RU-Fyo	MBE 103.2 (63.6 %)	MBE 125.3 (77.3 %)	MBE 153.8 (94.9 %)	MBE 111.0 (68.5 %)	MBE 152.7 (94.2 %)	MBE 86.9 (55.1 %)	MBE 107.3 (68.0 %)	MBE 133.5 (84.7 %)	MBE 94.5 (59.9 %)	MBE 127.4 (80.8 %)	MBE 99.1 (62.9 %)
NBDATA: 23369	STD 123.7 (76.3 %)	STD 135.7 (83.7 %)	STD 151.8 (93.7 %)	STD 130.2 (80.3 %)	STD 150.0 (92.5 %)	STD 132.4 (84.0 %)	STD 145.0 (92.0 %)	STD 161.7 (102.5 %)	STD 139.7 (88.6 %)	STD 148.8 (94.4 %)	STD 131.7 (83.5 %)
MEANREF: 162.1	RMSE 161.1 (99.4 %)	RMSE 184.7 (114.0 %)	RMSE 216.1 (133.3 %)	RMSE 171.1 (105.6 %)	RMSE 214.0 (132.0 %)	RMSE 158.4 (100.4 %)	RMSE 180.4 (114.4 %)	RMSE 209.7 (133.0 %)	RMSE 168.7 (107.0 %)	RMSE 195.9 (124.2 %)	RMSE 164.8 (104.5 %)
	CC 0.702	CC 0.702	CC 0.702	CC 0.710	CC 0.727	CC 0.670	CC 0.670	CC 0.670	CC 0.676	CC 0.714	CC 0.755
EFDC_UK-Amo	MBE 95.1 (52.2 %)	MBE 118.2 (64.9 %)	MBE 147.9 (81.3 %)	MBE 104.9 (57.6 %)	MBE 146.0 (80.2 %)	MBE 115.3 (64.2 %)	MBE 139.9 (77.9 %)	MBE 171.6 (95.6 %)	MBE 126.2 (70.3 %)	MBE 166.1 (92.5 %)	MBE 144.6 (80.6 %)
NBDATA: 23556	STD 118.9 (65.3 %)	STD 128.8 (70.8 %)	STD 142.4 (78.2 %)	STD 122.2 (67.2 %)	STD 130.0 (71.4 %)	STD 145.7 (81.1 %)	STD 159.9 (89.1 %)	STD 178.8 (99.6 %)	STD 152.4 (84.9 %)	STD 162.1 (90.3 %)	STD 166.4 (92.7 %)
MEANREF: 182.0	RMSE 152.2 (83.6 %)	RMSE 174.8 (96.0 %)	RMSE 205.3 (112.8 %)	RMSE 161.1 (88.5 %)	RMSE 195.5 (107.4 %)	RMSE 185.8 (103.5 %)	RMSE 212.5 (118.3 %)	RMSE 247.8 (138.0 %)	RMSE 197.8 (110.2 %)	RMSE 232.1 (129.3 %)	RMSE 220.5 (122.8 %)
	CC 0.651	CC 0.651	CC 0.651	CC 0.660	CC 0.693	CC 0.690	CC 0.690	CC 0.690	CC 0.695	CC 0.733	CC 0.675
EFDC_ZA-Kru	MBE 66.1 (25.8 %)	MBE 93.0 (36.3 %)	MBE 127.6 (49.8 %)	MBE 90.5 (35.3 %)	MBE 157.5 (61.5 %)	MBE 108.7 (42.4 %)	MBE 139.2 (54.3 %)	MBE 178.4 (69.6 %)	MBE 136.5 (53.3 %)	MBE 209.8 (81.9 %)	MBE 100.9 (39.4 %)
NBDATA: 715	STD 82.3 (32.1 %)	STD 88.1 (34.4 %)	STD 97.6 (38.1 %)	STD 87.1 (34.0 %)	STD 100.1 (39.1 %)	STD 136.4 (53.2 %)	STD 151.8 (59.2 %)	STD 172.6 (67.4 %)	STD 150.8 (58.9 %)	STD 178.8 (69.8 %)	STD 122.8 (47.9 %)
MEANREF: 256.3	RMSE 105.6 (41.2 %)	RMSE 128.1 (50.0 %)	RMSE 160.6 (62.7 %)	RMSE 125.6 (49.0 %)	RMSE 186.6 (72.8 %)	RMSE 174.4 (68.1 %)	RMSE 205.9 (80.4 %)	RMSE 248.2 (96.9 %)	RMSE 203.4 (79.4 %)	RMSE 275.7 (107.6 %)	RMSE 158.9 (62.0 %)
	CC 0.852	CC 0.852	CC 0.852	CC 0.854	CC 0.859	CC 0.819	CC 0.819	CC 0.819	CC 0.819	CC 0.829	CC 0.851
Kishinev	MBE 68.6 (41.6 %)	MBE 88.1 (53.4 %)	MBE 113.2 (68.6 %)	MBE 75.4 (45.7 %)	MBE 117.0 (70.9 %)	MBE 63.7 (38.6 %)	MBE 82.8 (50.2 %)	MBE 107.3 (65.1 %)	MBE 71.6 (43.4 %)	MBE 108.8 (65.9 %)	MBE 71.2 (43.2 %)

NBDATA: 16470	STD 90.0 (54.6 %)	STD 96.1 (58.3 %)	STD 104.7 (63.5 %)	STD 93.3 (56.5 %)	STD 100.4 (60.9 %)	STD 128.5 (77.9 %)	STD 141.5 (85.8 %)	STD 158.7 (96.2 %)	STD 136.7 (82.8 %)	STD 151.1 (91.6 %)	STD 106.9 (64.8 %)
MEANREF: 164.9	RMSE 113.2 (68.6 %)	RMSE 130.3 (79.0 %)	RMSE 154.2 (93.5 %)	RMSE 119.9 (72.7 %)	RMSE 154.2 (93.5 %)	RMSE 143.4 (86.9 %)	RMSE 163.9 (99.4 %)	RMSE 191.6 (116.1 %)	RMSE 154.3 (93.5 %)	RMSE 186.2 (112.8 %)	RMSE 128.5 (77.9 %)
	CC 0.660	CC 0.660	CC 0.660	CC 0.668	CC 0.683	CC 0.720	CC 0.720	CC 0.720	CC 0.723	CC 0.747	CC 0.691
Lugo	MBE 139.1 (70.3 %)	MBE 167.2 (84.5 %)	MBE 203.4 (102.8 %)	MBE 153.4 (77.5 %)	MBE 192.9 (97.5 %)	MBE 166.9 (84.4 %)	MBE 197.3 (99.8 %)	MBE 236.5 (119.6 %)	MBE 182.9 (92.5 %)	MBE 224.4 (113.5 %)	MBE 185.4 (93.7 %)
NBDATA: 2181	STD 240.6 (121.6 %)	STD 260.2 (131.6 %)	STD 286.0 (144.6 %)	STD 248.0 (125.4 %)	STD 244.4 (123.5 %)	STD 258.2 (130.5 %)	STD 282.0 (142.6 %)	STD 313.0 (158.2 %)	STD 268.9 (135.9 %)	STD 275.0 (139.0 %)	STD 266.2 (134.6 %)
MEANREF: 197.8	RMSE 277.9 (140.5 %)	RMSE 309.3 (156.4 %)	RMSE 350.9 (177.4 %)	RMSE 291.6 (147.4 %)	RMSE 311.3 (157.4 %)	RMSE 307.5 (155.4 %)	RMSE 344.2 (174.0 %)	RMSE 392.3 (198.3 %)	RMSE 325.2 (164.4 %)	RMSE 355.0 (179.4 %)	RMSE 324.4 (164.0 %)
	CC 0.383	CC 0.383	CC 0.383	CC 0.392	CC 0.427	CC 0.563	CC 0.563	CC 0.563	CC 0.571	CC 0.613	CC 0.468
PeronneSaintQuentin-tour2	MBE 50.9 (28.9 %)	MBE 69.9 (39.6 %)	MBE 94.3 (53.5 %)	MBE 60.3 (34.2 %)	MBE 97.7 (55.4 %)	MBE 72.2 (40.9 %)	MBE 92.9 (52.7 %)	MBE 119.6 (67.8 %)	MBE 82.9 (47.0 %)	MBE 121.1 (68.7 %)	MBE 91.9 (52.1 %)
NBDATA: 8101	STD 66.9 (37.9 %)	STD 70.2 (39.8 %)	STD 75.7 (43.0 %)	STD 68.0 (38.6 %)	STD 72.0 (40.8 %)	STD 115.6 (65.6 %)	STD 128.3 (72.8 %)	STD 145.2 (82.4 %)	STD 123.4 (70.0 %)	STD 140.3 (79.5 %)	STD 109.7 (62.2 %)
MEANREF: 176.3	RMSE 84.1 (47.7 %)	RMSE 99.0 (56.2 %)	RMSE 120.9 (68.6 %)	RMSE 90.9 (51.6 %)	RMSE 121.3 (68.8 %)	RMSE 136.3 (77.3 %)	RMSE 158.4 (89.8 %)	RMSE 188.1 (106.7 %)	RMSE 148.6 (84.3 %)	RMSE 185.3 (105.1 %)	RMSE 143.1 (81.1 %)
	CC 0.797	CC 0.797	CC 0.797	CC 0.805	CC 0.823	CC 0.790	CC 0.790	CC 0.790	CC 0.796	CC 0.818	CC 0.720
Pokola	MBE 57.5 (23.5 %)	MBE 82.6 (33.8 %)	MBE 115.0 (47.1 %)	MBE 85.6 (35.1 %)	MBE 131.6 (53.9 %)	MBE 191.7 (78.5 %)	MBE 228.0 (93.4 %)	MBE 274.8 (112.5 %)	MBE 232.5 (95.2 %)	MBE 301.0 (123.3 %)	MBE 175.1 (71.7 %)
NBDATA: 1435	STD 180.4 (73.9 %)	STD 194.8 (79.8 %)	STD 214.2 (87.7 %)	STD 196.7 (80.5 %)	STD 195.7 (80.2 %)	STD 213.3 (87.4 %)	STD 235.2 (96.3 %)	STD 264.0 (108.1 %)	STD 238.0 (97.5 %)	STD 247.5 (101.4 %)	STD 250.6 (102.6 %)
MEANREF: 244.2	RMSE 189.3 (77.5 %)	RMSE 211.6 (86.7 %)	RMSE 243.1 (99.6 %)	RMSE 214.5 (87.8 %)	RMSE 235.8 (96.6 %)	RMSE 286.8 (117.5 %)	RMSE 327.6 (134.2 %)	RMSE 381.1 (156.1 %)	RMSE 332.7 (136.3 %)	RMSE 389.7 (159.6 %)	RMSE 305.7 (125.2 %)
	CC 0.579	CC 0.579	CC 0.579	CC 0.580	CC 0.616	CC 0.723	CC 0.723	CC 0.723	CC 0.724	CC 0.758	CC 0.598
Valenciennes	MBE 56.8 (31.1 %)	MBE 76.8 (42.0 %)	MBE 102.5 (56.1 %)	MBE 66.7 (36.5 %)	MBE 105.8 (57.9 %)	MBE 84.3 (46.1 %)	MBE 106.5 (58.3 %)	MBE 135.2 (74.0 %)	MBE 95.6 (52.3 %)	MBE 136.6 (74.7 %)	MBE 95.9 (52.5 %)
NBDATA: 910	STD 103.8 (56.8 %)	STD 111.6 (61.1 %)	STD 122.6 (67.1 %)	STD 107.6 (58.8 %)	STD 110.0 (60.2 %)	STD 141.5 (77.4 %)	STD 157.0 (85.9 %)	STD 177.5 (97.1 %)	STD 149.6 (81.8 %)	STD 165.5 (90.6 %)	STD 135.8 (74.3 %)

MEANREF: 182.8	RMSE 118.3 (64.7 %)	RMSE 135.5 (74.1 %)	RMSE 159.8 (87.4 %)	RMSE 126.6 (69.2 %)	RMSE 152.6 (83.5 %)	RMSE 164.7 (90.1 %)	RMSE 189.7 (103.8 %)	RMSE 223.1 (122.1 %)	RMSE 177.5 (97.1 %)	RMSE 214.6 (117.4 %)	RMSE 166.2 (90.9 %)
	CC 0.673	CC 0.673	CC 0.673	CC 0.678	CC 0.707	CC 0.782	CC 0.782	CC 0.782	CC 0.784	CC 0.806	CC 0.675
Villaviciosa	MBE 32.7 (16.0 %)	MBE 52.4 (25.6 %)	MBE 77.9 (38.1 %)	MBE 44.9 (22.0 %)	MBE 83.4 (40.8 %)	MBE 114.4 (56.0 %)	MBE 141.0 (69.0 %)	MBE 175.2 (85.7 %)	MBE 131.3 (64.2 %)	MBE 181.2 (88.7 %)	MBE 100.1 (49.0 %)
NBDATA: 2549	STD 94.7 (46.4 %)	STD 98.5 (48.2 %)	STD 104.4 (51.1 %)	STD 95.9 (46.9 %)	STD 94.5 (46.2 %)	STD 143.7 (70.3 %)	STD 159.6 (78.1 %)	STD 180.6 (88.4 %)	STD 153.7 (75.2 %)	STD 172.5 (84.4 %)	STD 119.8 (58.6 %)
MEANREF: 204.4	RMSE 100.2 (49.0 %)	RMSE 111.6 (54.6 %)	RMSE 130.2 (63.7 %)	RMSE 105.9 (51.8 %)	RMSE 126.0 (61.7 %)	RMSE 183.7 (89.9 %)	RMSE 212.9 (104.2 %)	RMSE 251.6 (123.1 %)	RMSE 202.1 (98.9 %)	RMSE 250.2 (122.4 %)	RMSE 156.1 (76.4 %)
	CC 0.668	CC 0.668	CC 0.668	CC 0.677	CC 0.707	CC 0.787	CC 0.787	CC 0.787	CC 0.792	CC 0.809	CC 0.700
Vitoria	MBE 126.8 (65.2 %)	MBE 153.7 (78.9 %)	MBE 188.2 (96.7 %)	MBE 140.3 (72.1 %)	MBE 185.7 (95.4 %)	MBE 141.2 (72.6 %)	MBE 169.2 (86.9 %)	MBE 205.3 (105.5 %)	MBE 155.7 (80.0 %)	MBE 199.8 (102.6 %)	MBE 140.4 (72.1 %)
NBDATA: 2095	STD 140.8 (72.3 %)	STD 153.8 (79.0 %)	STD 171.3 (88.0 %)	STD 147.2 (75.6 %)	STD 149.5 (76.8 %)	STD 182.9 (94.0 %)	STD 201.8 (103.7 %)	STD 226.6 (116.4 %)	STD 193.1 (99.2 %)	STD 206.0 (105.8 %)	STD 189.2 (97.2 %)
MEANREF: 194.7	RMSE 189.5 (97.4 %)	RMSE 217.4 (111.7 %)	RMSE 254.5 (130.7 %)	RMSE 203.3 (104.5 %)	RMSE 238.5 (122.5 %)	RMSE 231.1 (118.7 %)	RMSE 263.4 (135.3 %)	RMSE 305.8 (157.1 %)	RMSE 248.1 (127.4 %)	RMSE 287.0 (147.4 %)	RMSE 235.6 (121.0 %)
	CC 0.676	CC 0.676	CC 0.676	CC 0.683	CC 0.716	CC 0.728	CC 0.728	CC 0.728	CC 0.732	CC 0.761	CC 0.605
Zaragoza	MBE 166.9 (84.9 %)	MBE 197.3 (100.3 %)	MBE 236.3 (120.2 %)	MBE 182.6 (92.9 %)	MBE 226.6 (115.2 %)	MBE 170.9 (86.9 %)	MBE 201.5 (102.5 %)	MBE 241.0 (122.6 %)	MBE 187.4 (95.3 %)	MBE 229.3 (116.6 %)	MBE 197.5 (100.4 %)
NBDATA: 1140	STD 209.7 (106.7 %)	STD 230.1 (117.0 %)	STD 256.7 (130.5 %)	STD 221.5 (112.7 %)	STD 222.3 (113.1 %)	STD 238.8 (121.5 %)	STD 263.3 (133.9 %)	STD 295.2 (150.1 %)	STD 253.6 (129.0 %)	STD 262.4 (133.4 %)	STD 251.6 (128.0 %)
MEANREF: 196.6	RMSE 268.1 (136.3 %)	RMSE 303.0 (154.1 %)	RMSE 348.9 (177.4 %)	RMSE 287.1 (146.0 %)	RMSE 317.4 (161.4 %)	RMSE 293.7 (149.4 %)	RMSE 331.6 (168.6 %)	RMSE 381.1 (193.8 %)	RMSE 315.3 (160.4 %)	RMSE 348.4 (177.2 %)	RMSE 319.8 (162.7 %)
	CC 0.651	CC 0.651	CC 0.651	CC 0.656	CC 0.685	CC 0.731	CC 0.731	CC 0.731	CC 0.734	CC 0.764	CC 0.636

Table S3: Validation results for the comparison between the 11 methods to estimate PAR from satellite imagery at the 33 in-situ stations in overcast conditions (PAR CMF<0.3)