

Supplement belonging to:

Validation of SMAP L2 passive-only soil moisture products using upscaled in situ measurements collected in Twente, The Netherlands

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Table

10 **Table S1:** Vegetation cover, sensor depth and type, and dates on which changes were made in the location of the monitoring stations that were operational in the Twente network from January 2015 up to March 2019. Note that when the description indicates that the station was equipped with 5TM sensors after a specific date, it means that EC-TM sensors were active before.

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Table S1: Vegetation cover, sensor depth and type, and dates on which changes were made in the location of the monitoring stations that were operational in the Twente network from January 2015 up to March 2019. Note that when the description indicates that the station was equipped with 5TM sensors after a specific date, it means that EC-TM sensors were active before.

Station ID	Vegetation cover	Sensor depth (in cm) and type in parenthesis ()	Location changes
ITCSM01	grassland	5, 10, 20, 40 (5TM)	
ITCSM02	grassland/maize	5 (5TM as of 8-4-2015), 10 (5TM as of 8-7-2016), 20, 40 (5TM as of 8-4-2015)	
ITCSM03	grassland	5, 10 (5TM), 20, 40, 80 (since 2-5-2017, 5TM)	2-5-2017: reinstalled
ITCSM04	grassland	5, 10, 20 (5TM as of 9-3-2016)	9-3-2016: reinstalled
ITCSM05	grassland	5, 10, 20, 40 (5TM as of 22-4-2016), 80 (5TM, available from 2-5-2017)	2-5-2017: installed in another field 24-5-2018: reinstalled
ITCSM06	rotating crops: maize, potato	5, 10, 20, 40, 80 (5TM)	20-5-2016: reinstalled 29-8-2017: stopped
ITCSM07	rotating crops: maize, wheat	5, 10, 20, 40 (5TM)	3-11-2015: reinstalled
ITCSM08	maize	5, 10, 20, 40 (5TM since 22-4-2016)	
ITCSM09	rotating crops: maize, wheat	5, 10, 20, 40 (5TM)	
ITCSM10	rotating crops: wheat, maize, potato	5, 10, 20, 40, 80 (5TM since 20-5-2016)	20-5-2016: installed in another field
ITCSM10	grassland	5, 10, 20, 40 (5TM since 9-10-2015), 80 (5TM since 18-10-2016)	18-10-2016: installed in another field
ITCSM12	grassland	5, 10, 20, 40 (5TM since 16-4-2015)	
ITCSM13	grassland	5, 10, 20, 40 (5TM)	
ITCSM14	grassland	5, 10, 20, 40 (5TM), 80 (5TM since 1-4-2016)	1-4-2016: installed in another field
ITCSM15	grassland	5, 10, 20, (5TM since 7-3-2016) 40, 80 (5TM, available from 7-3-2016)	7-3-2016: reinstalled
ITCSM16	grassland	5, 10 (5TM)	
ITCSM17	grassland	5, 10 (5TM), 20, 40, 80 (5TM, available from 1-4-2016)	1-4-2016: reinstalled
ITCSM18	grassland/maize	5, 10, 20, 40 (5TM since 17-4-2015)	
ITCSM19	grassland	5, 10, 20, 40 (5TM)	20-9-2017: stopped
ITCSM20	forest	5, 10, 20, 40 (5TM)	31-12-2016: stopped
Hupsel	grassland	5, 10, 20, 40, 80 (5TM)	20-12-2017: installed
Twenthe	natural pasture	5, 10, 20, 40, 80 (5TM)	20-12-2017: installed

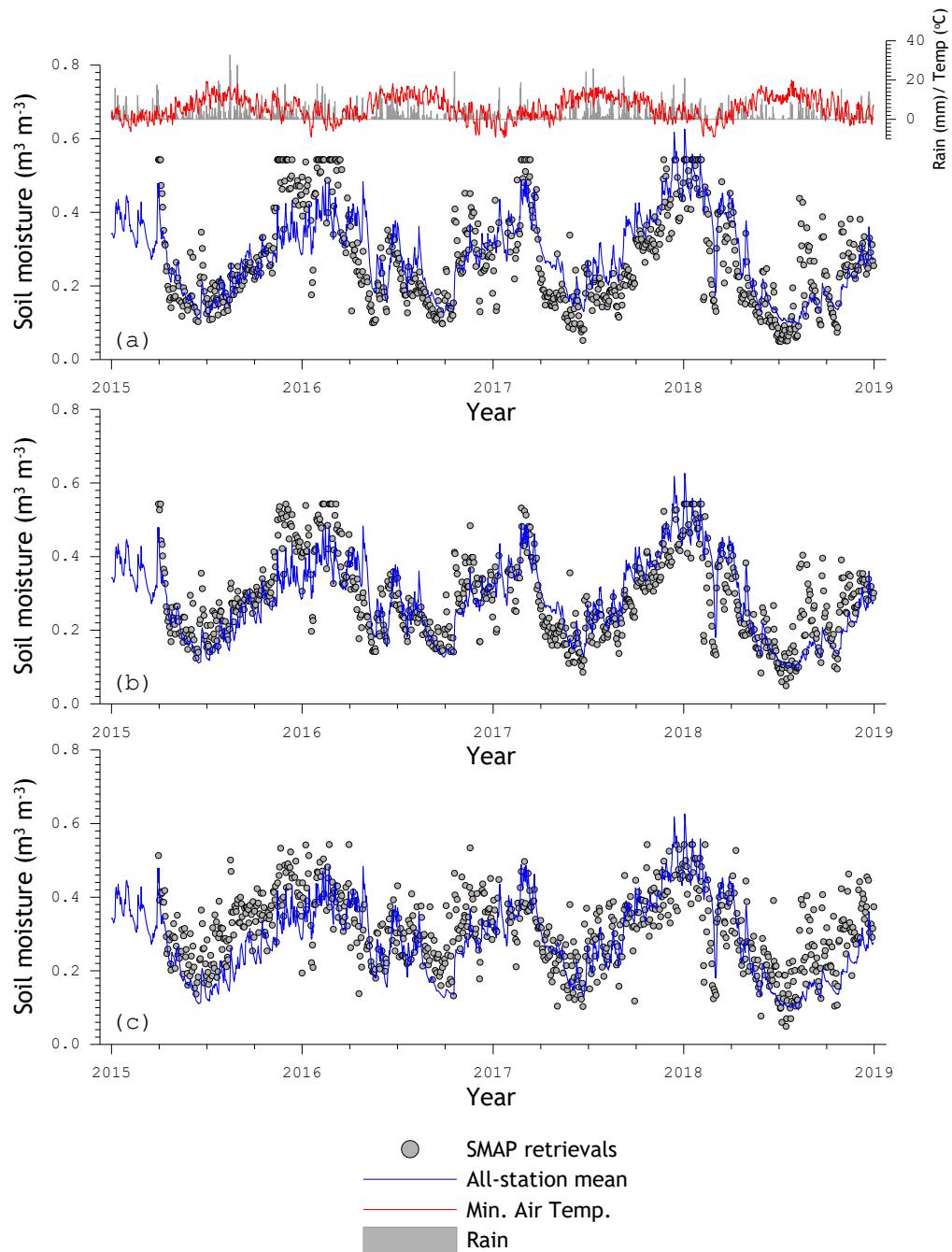


Figure S1. Same as Fig. 8 except for reference pixel 3306.

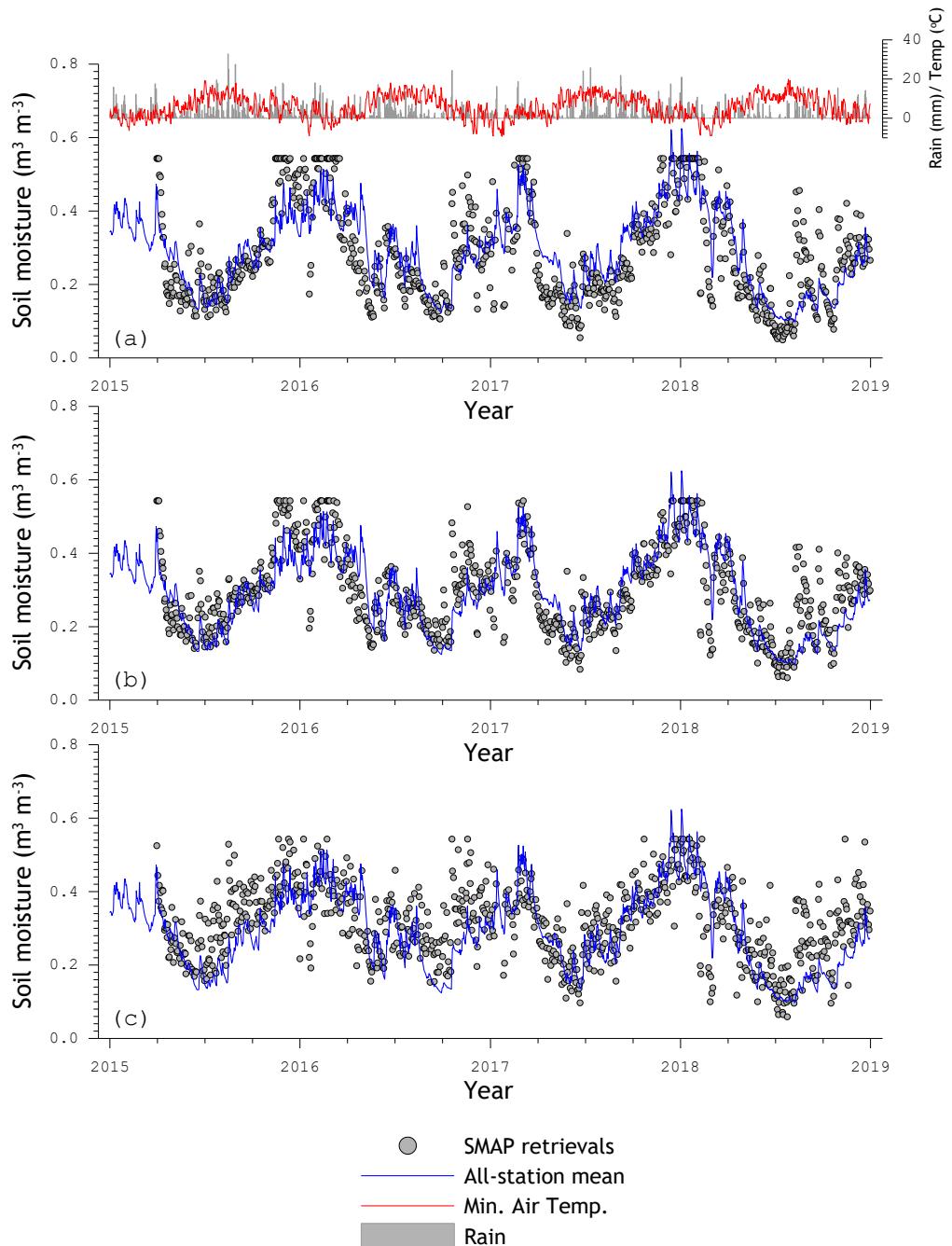


Figure S2. Same as Fig. 8 except for reference pixel 4371.

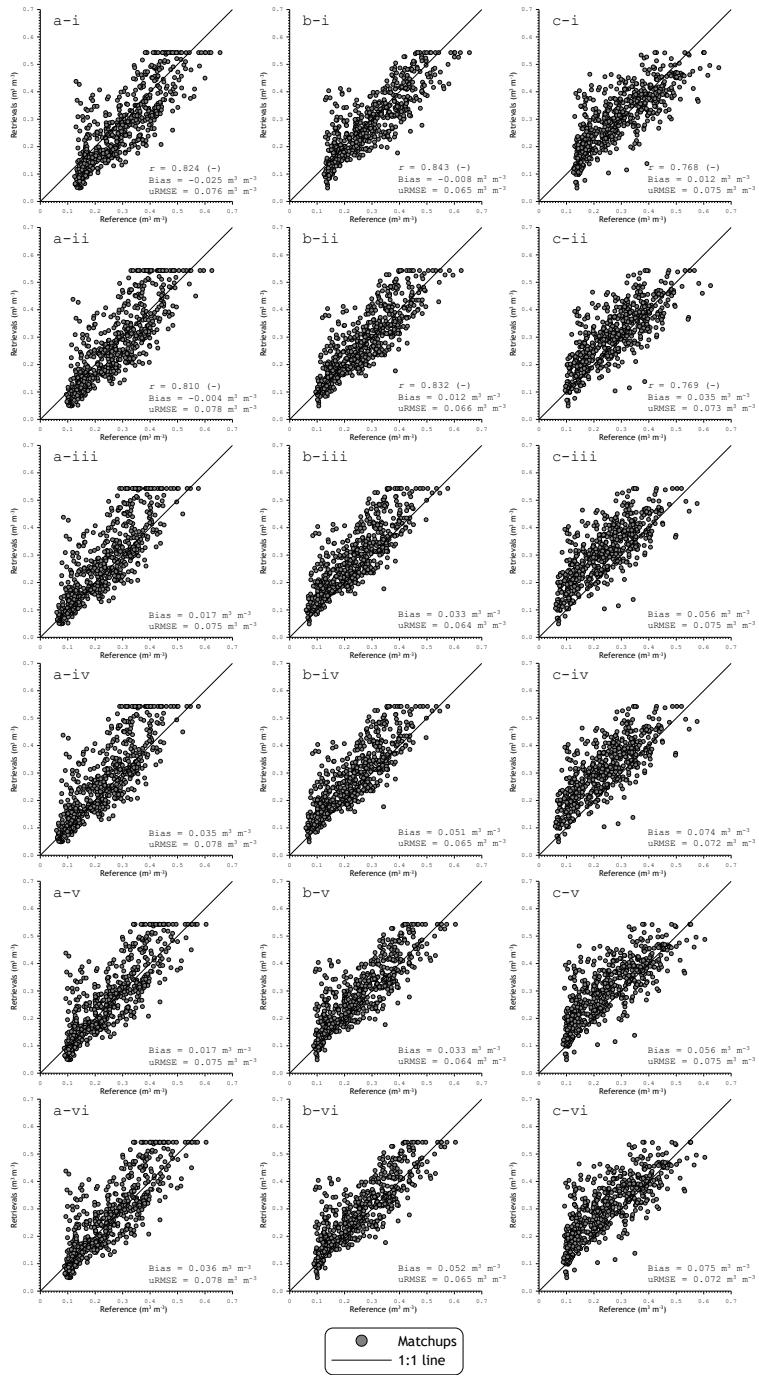


Figure S3. Scatter plots of morning SMAP soil moisture retrievals for reference pixel 3606 versus in situ references, a), b), and c) indicate SMAP estimates derived using SCA-H, SCA-V and DCA, respectively; i) holds as reference the unbiased 7-station mean, ii) holds as reference the all station mean, iii) holds as reference model-all spatially scaled version of i, iv) holds as reference model-all spatially scaled version of ii, v) holds as reference model-pdf1 spatially scaled version of i, vi) holds as reference model-pdf1 spatially scaled version of ii.

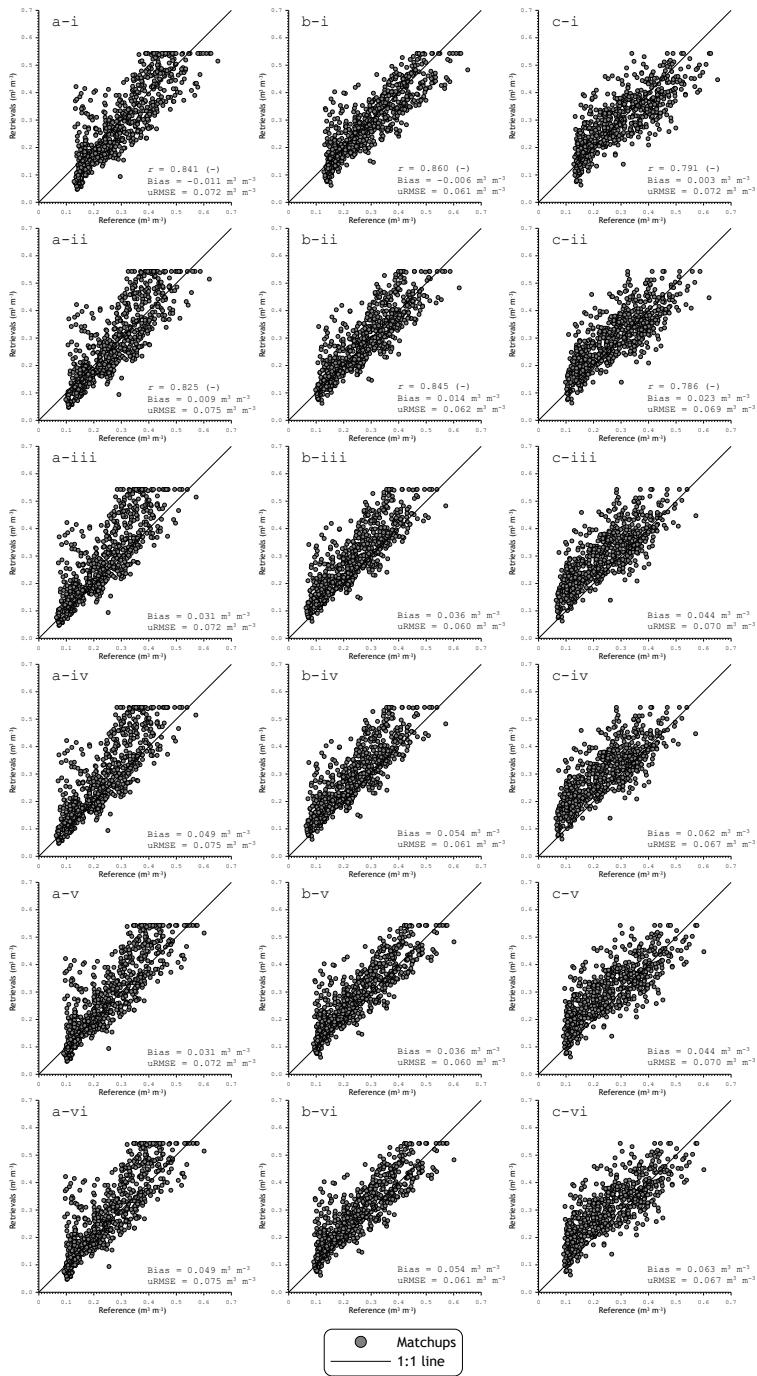


Figure S4. Same as Fig. S3 except that the scatter plots are showing the afternoon SMAP soil moisture retrievals for reference pixel 3606.

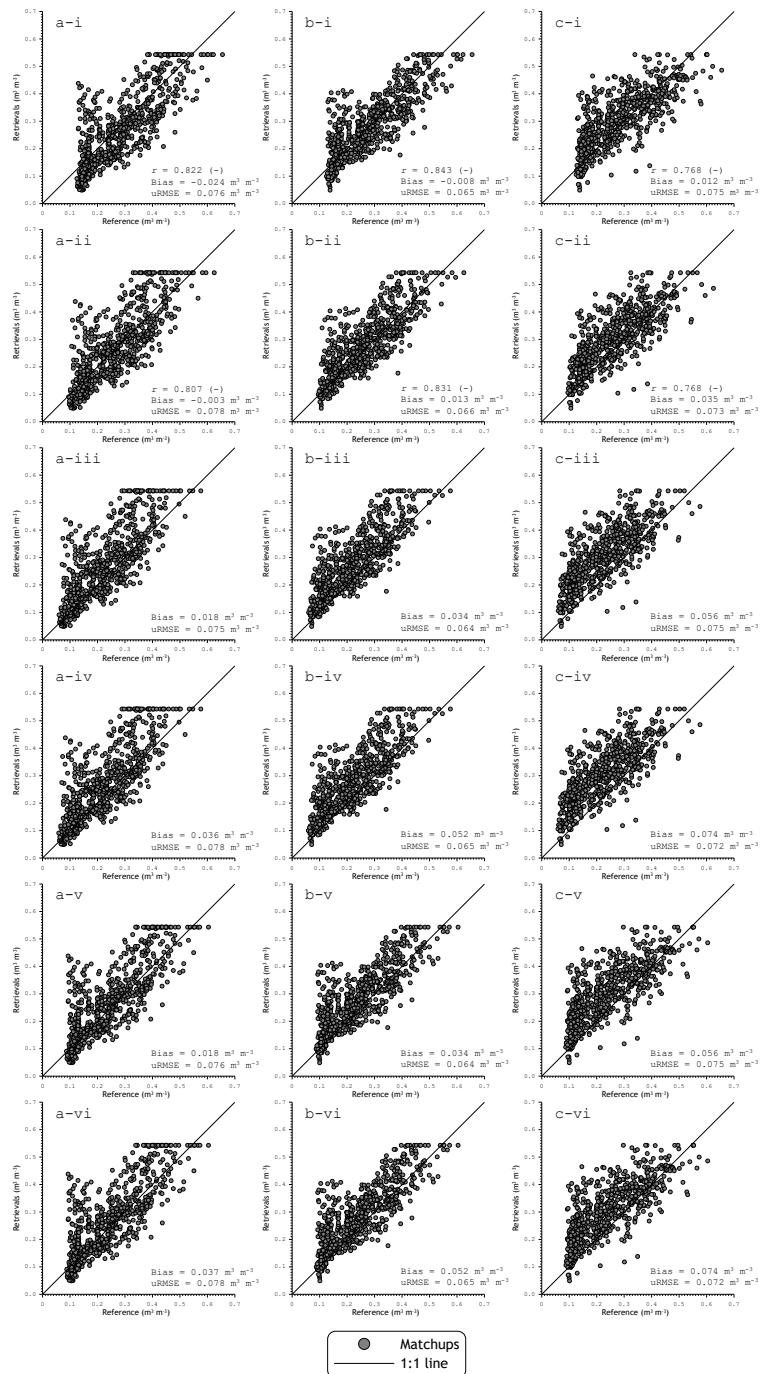


Figure S5. Same as Fig. S3 except that the scatter plots are showing the morning SMAP soil moisture retrievals for reference pixel 3306.

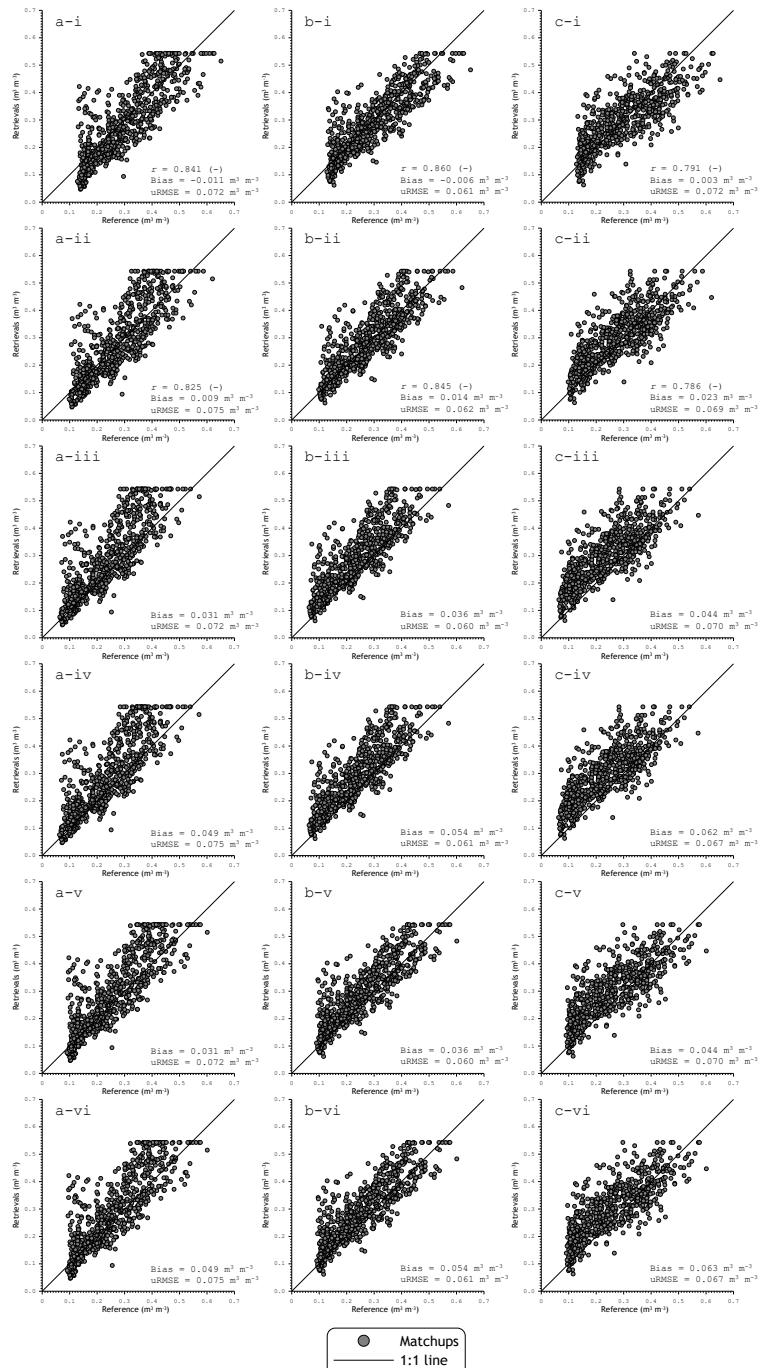


Figure S6. Same as Fig. S3 except that the scatter plots are showing the afternoon SMAP soil moisture retrievals for reference pixel 3306.

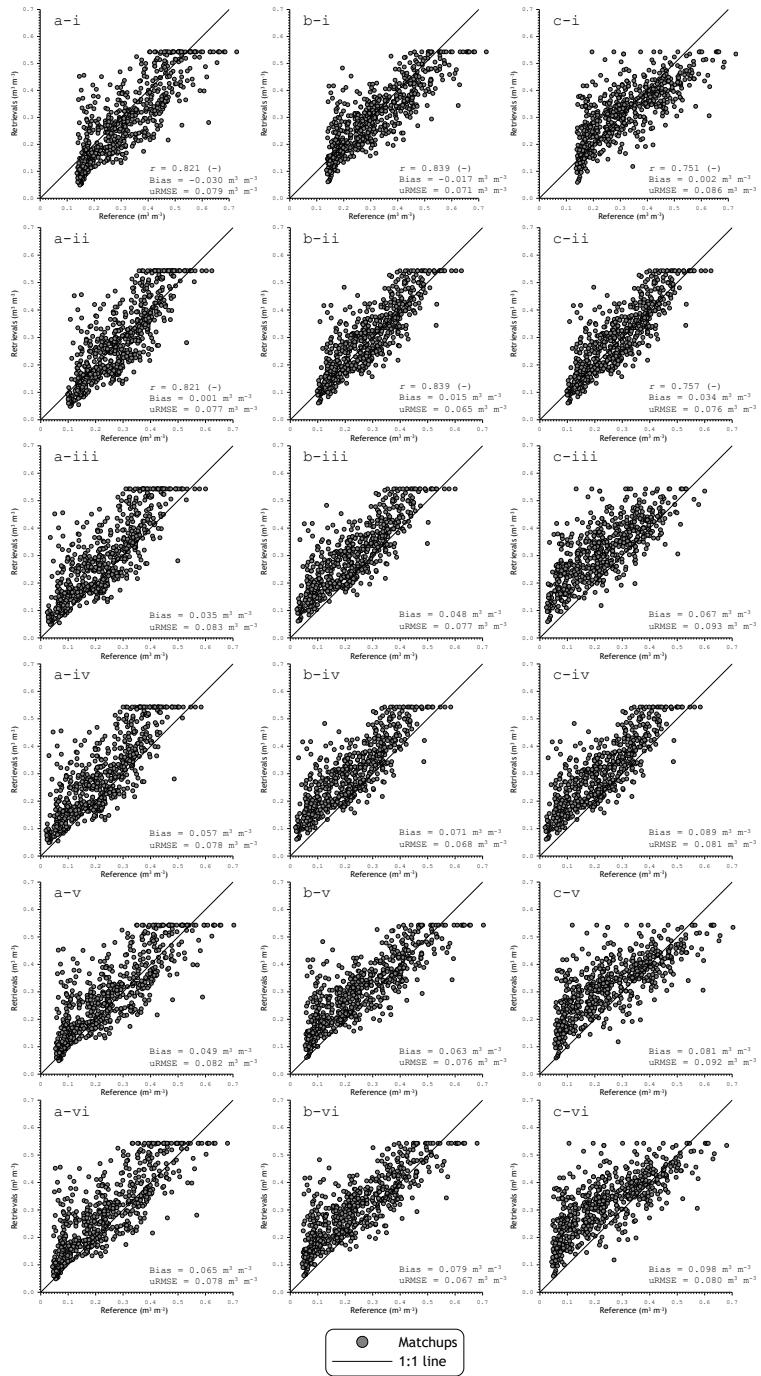


Figure S7. Same as Fig. S3 except that the scatter plots are showing the morning SMAP soil moisture retrievals for reference pixel 4371.

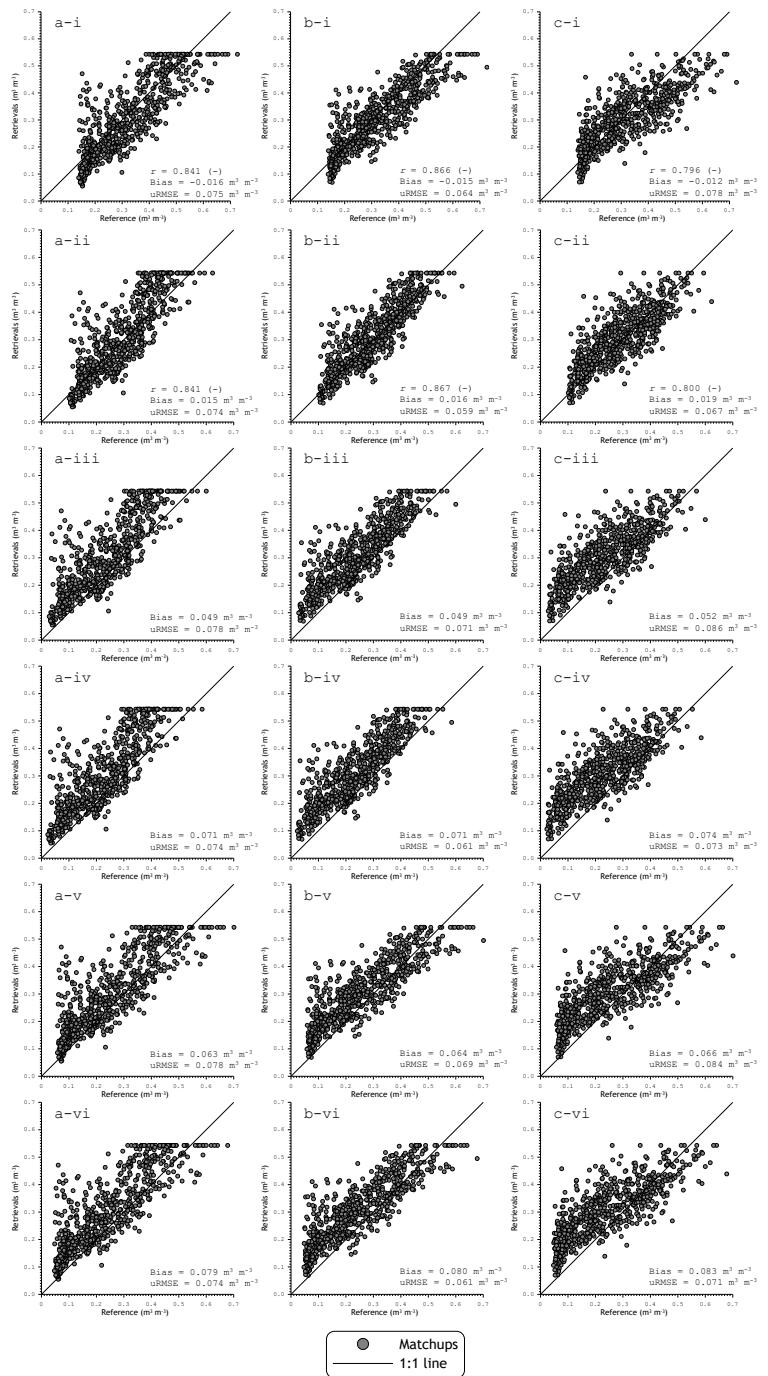


Figure S8. Same as Fig. S3 except that the scatter plots are showing the afternoon SMAP soil moisture retrievals for reference pixel 4371.