Supplementary Information

Table S1 Sensor configurations used for calculating the historical 0–0.5 m integrated column soil moisture in the present analysis and in S22. The configurations refer to the "original configuration" of TDR (TD) and 10HS (HS) sensors, with profile number (if more than one is present at the station) and installation depths in cm indicated as well (i.e. "sensor(profile)_depth").

Station	Present analysis	S22
BAS	HS_005, HS_010, HS_030, HS_050	HS_005, HS_010, HS_030, HS_050
BER	TD_010, HS_050	HS_005, HS_010, HS_050
CHM	HS_005, HS_030, HS_050	station not used
CHN	TD2_005, TD1_010, TD2_030, TD2_050	HS1_005, HS1_010, HS1_050
PAY	TD_010, TD_050	station not used
PLA	HS_005, TD_010, TD_030, HS_050	station not used
REC	TD_010, HS_030	TD_010, HS_030
RHB	TD_005, TD_015, TD_025, TD_035, HS_055	station not used
TAE	HS_005, TD_010, TD_050	station not used
WYN	TD_010, HS_030, TD_050	station not used
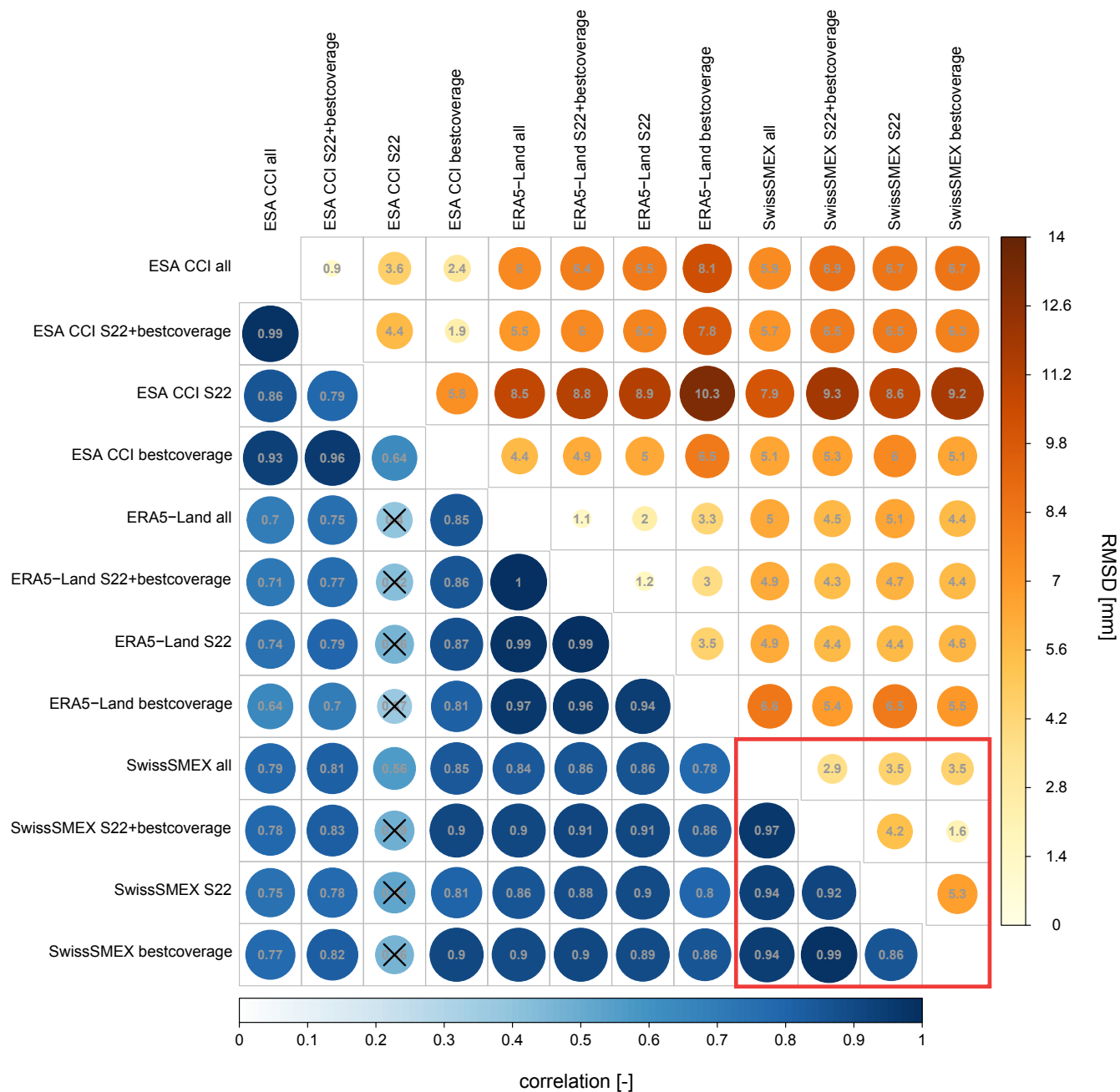
Figure S1. As Figure 4 of the main manuscript, but for summer half-year correlations and RMSDs.
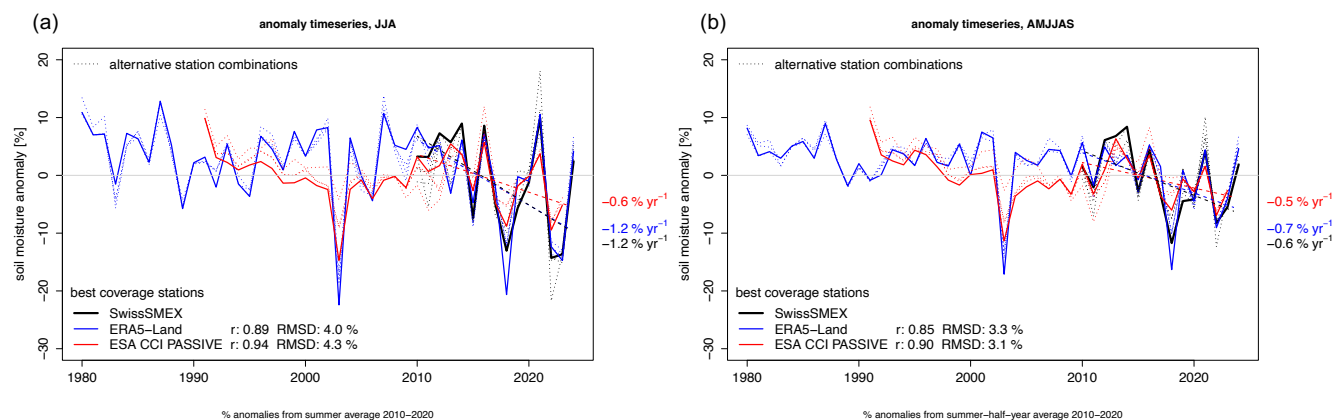
Figure S2. As Figure 5 of the main manuscript, but for (a) summer and (b) summer half-year 0–0.5 m integrated soil moisture anomalies expressed as percentage deviation from the corresponding average of the 2010–2020 period.