Supplement of Wet and dry spells in Senegal: comparison of detection based on satellite products, reanalysis, and in situ estimates

Cheikh Modou Noreyni Fall et al.

Correspondence to: Cheikh Modou Noreyni Fall (noreyni27@gmail.com)

The copyright of individual parts of the supplement might differ from the article licence.
Additional Figures

Supplementary figures were included to provide additional informations on others dry and wet spell indicators beyond what was pratical in the main article.

**Variogram**

Figure S1: Climatological rainfall amount variogram computed from the gaugedata from June to October.
Dry Spells

Figure S2: Spatial distribution of the number of DSC10 computed in the rainy season (June to October) for the overlap period (1998-2010) for: a) TRMM, b) TAMSAT, c) CMORPH, d) CHIRPS, e) CPC, f) NCEP, g) ERA5, h) OK, i) BK.
Figure S3: Spatial distribution of the number of DSC20 computed in the rainy season (June to October) for the overlap period (1998-2010) for: a) TRMM, b) TAMSAT, c) CMORPH, d) CHIRPS, e) CPC, f) NCEP, g) ERA5, h) OK, i) BK.

Wet Spells
Figure S4: Spatial distribution of the number of DSI computed in the rainy season (June to October) for the overlap period (1998-2010) for: a) TRMM, b) TAMSAT, c) CMORPH, d) CHIRPS, e) CPC, f) NCEP, g) ERA5, h) OK, i) BK.
Figure S5: Spatial distribution of the number of DSxl computed in the rainy season (June to October) for the overlap period (1998-2010) for: a) TRMM, b) TAMSAT, c) CMORPH, d) CHIRPS, e) CPC, f) NCEP, g) ERA5, h) OK, i) BK.
Figure S6: Climatological (1998-2010) distribution of the number of DSC5, DSC15, DSs and DSm for: TRMM, TAMSAT, CMORPH, CHIRPS, CPC, NCEP, ERA5, BK, OK. The + represent the mean value, the − represent the median value, the box represents the 25th and 75th percentile values, and the whiskers represent the extreme values.
Figure S7: Climatological (1998-2010) distribution of the seasonal distribution of number of DSC5, DSC15, DSs and DSm for: TRMM, TAMSAT, CMORPH, CHIRPS, CPC, NCEP, ERA5, BK, OK.
Figure S8: Taylor Diagram of the occurrence of DSC5, DSC15, DSs and DSm for TRMM, TAMSAT, CMORPH, CHIRPS, CPC, NCEP, ERA5, BK. OK product is considered as reference.
Figure S10: Spatial distribution of the number of WS1 99P computed in the rainy season (June to October) for the overlap period (1998-2010) for: a) TRMM, b) TAMSAT, c) CMORPH, d) CHIRPS, e) CPC, f) NCEP, g) ERA5, h) OK, i) BK.
Figure S11: Spatial distribution of the number of WSM 99P computed in the rainy season (June to October) for the overlap period (1998-2010) for: a) TRMM, b) TAMSAT, c) CMORPH, d) CHIRPS, e) CPC, f) NCEP, g) ERA5, h) OK, i) BK.
Figure S12: Spatial distribution of the number of WSC5 99P computed in the rainy season (June to October) for the overlap period (1998-2010) for: 
a) TRMM, b) TAMSAT, c) CMORPH, d) CHIRPS, e) CPC, f) NCEP, g) ERA5, h) OK, i) BK.
Figure S13: Spatial distribution of the number of WSC15 99P computed in the rainy season (June to October) for the overlap period (1998-2010) for: a) TRMM, b) TAMSAT, c) CMORPH, d) CHIRPS, e) CPC, f) NCEP, g) ERA5, h) OK, i) BK.
Figure S14: Seasonal cycle of the occurrence of WS1, WSM, WSC5 and WSC15 (90th) percentiles averaged for the period 1998-2010, for TRMM, TAMSAT, CMORPH, CHIRPS, CPC, NCEP, ERA5, BK, OK

Figure S15: Same as figure S5 for the 95th percentile
Figure S16: Same as figure S5 for the 99.5\textsuperscript{th} percentile

Figure S17: Yearly cumulated rainfall provided by WS1, WSM, WSC5 and WSC15 (90th) percentiles, averaged for the period 1998-2010, for TRMM, TAMSAT, CMORPH, CHIRPS, CPC, NCEP, ERA5, BK, OK. The + represent the mean value, the − represent the median value, the box represents the 25th and 75th percentile values, and the whiskers represent the extreme values.
Figure S18: Same as Figure S8 for the $95^{th}$ percentiles.

Figure S19: Same as Figure S8 for the $99.5^{th}$ percentile.
Figure S20: Taylor Diagram of the spatial distribution of the number of WSC5, WS1, WSM, WSC5 and WSC15 (90th) percentiles using TRMM, TAMSAT, CMORPH, CHIRPS, CPC, NCEP, ERA5, BK. OK product is considered as reference during the period 1998-2010.
Figure S21: Taylor Diagram of the occurrence of WSC5, WS1, WSM, WSC5 and WSC15 (95th) percentiles using TRMM, TAMSAT, CMORPH, CHIRPS, CPC, NCEP, ERA5, OK. BK product is considered as reference during the period 1998-2010.