

# TAMSAT DATA POLICY

The following supersedes any previously published policies.

## MOTIVATION

The TAMSAT Research Group (Tropical Applications of Meteorology using SATellite data and ground-based observations) is a university-based team of scientists funded by national and international projects since the mid 1980s, and it is within this context that the TAMSAT Data Policy is designed. We investigate the use of satellite imagery for estimating rainfall and other surface water budget components mainly in Africa but also in other regions as required. Routine products of the group for Africa are:

### Rainfall estimates

- Spatial Coverage: Africa
- Spatial Resolution: 0.0375° Geographic Lat-Lon
- Temporal Coverage: 1983 - present
- Temporal Resolution: Daily, Pentadal (5-daily), Dekadal (10-daily), Monthly, Seasonal
- Data Formats: NetCDF (data), PNG (QuickLook images)

### Rainfall anomalies

- Spatial Coverage: Africa
- Spatial Resolution: 0.0375° Geographic Lat-Lon
- Temporal Coverage: 1983 - present against 1983-2012 rainfall climatology
- Temporal Resolution: Pentadal (5-daily), Dekadal (10-daily), Monthly, Seasonal
- Data Formats: NetCDF (data), PNG (QuickLook images)

### Rainfall climatologies

- Spatial Coverage: Africa
- Spatial Resolution: 0.0375° Geographic Lat-Lon
- Temporal Coverage: 1983 - 2012
- Temporal Resolution: Pentadal, Dekadal, Monthly, Seasonal
- Data Formats: NetCDF (data), PNG (QuickLook images)

### Tercile anomalies (discontinued)

- Spatial Coverage: Africa
- Spatial Resolution: 0.0375° Geographic Lat-Lon
- Temporal Coverage: January 1983 – March 2014 against 1983-2012 rainfall climatology
- Temporal Resolution: Monthly
- Data Formats: NetCDF (data), PNG (QuickLook images)

The TAMSAT rainfall estimates and derived products are based on Meteosat thermal infra-red (TIR) imagery provided by EUMETSAT. The TIR is calibrated against an extensive ground-based rain gauge data archive. In January 2017, the TAMSAT Group released TAMSAT Version 3.0 – which is

now produced operationally alongside Version 2.0. The calibration used to derive Version 2.0 and carried out in 2011, is described in Tarnavsky et al. (2014). The TAMSAT Version 2.0 rainfall estimates are collated into the TAMSAT African Rainfall Climatology And Time-series (TARCAT) dataset. The development of the TARCAT dataset is described in Maidment et al. (2014).

Although the essence of the TAMSAT estimation approach is retained in Version 3.0, the calibration methodology differs markedly to improve characterisation of spatial changes in the rainfall climate. Please consult the TAMSAT website (<http://www.tamsat.org.uk>) for further information.

Data are made available by the TAMSAT Research Group 48 hours after the end of a pentad (for example, for the first pentad of January 2016, data are made available by 7<sup>th</sup> January).

## TERMS OF USE

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### When citing TAMSAT data, please cite the following papers:

- Tarnavsky, E., Grimes, D., Maidment, R., Black, E., Allan, R., Stringer, M., Chadwick, R. & F. Kayitakire (2014). Extension of the TAMSAT Satellite-based Rainfall Monitoring over Africa and from 1983 to present. *Journal of Applied Meteorology and Climatology*. 53 (12): 2805-2822. DOI: 10.1175/JAMC-D-14-0016.1.
- Maidment, R., D. Grimes, R. P. Allan, E. Tarnavsky, M. Stringer, T. Hewison, R. Roebeling & E. Black (2014). The 30 year TAMSAT African Rainfall Climatology And Time series (TARCAT) data set. *Journal of Geophysical Research*. 119: 10,619-10,644. DOI: 10.1002/2014JD021927.

## REFERENCES

- Grimes, D.I.F., Pardo-Igúzquiza, E. & Bonifacio, R. (1999). Optimal Areal Rainfall Estimation Using Raingauges and Satellite Data. *Journal of Hydrology*, 222: 93-108.
- Maidment, R., D. Grimes, R. P. Allan, E. Tarnavsky, M. Stringer, T. Hewison, R. Roebeling & E. Black (2014). The 30 year TAMSAT African Rainfall Climatology And Time series (TARCAT) data set. *Journal of Geophysical Research*. 119: 10,619-10,644. DOI: 10.1002/2014JD021927.
- Milford, J.R., & Dugdale, G. (1990). Estimation of Rainfall Using Geostationary Satellite Data. *Applications of Remote Sensing in Agriculture*, Butterworth, London Proceedings of the 48th Easter School in Agricultural Science, University of Nottingham. April 1989.
- Tarnavsky, E., Grimes, D., Maidment, R., Black, E., Allan, R., Stringer, M., Chadwick, R. & F. Kayitakire (2014). Extension of the TAMSAT Satellite-based Rainfall Monitoring over Africa and from 1983 to present. *Journal of Applied Meteorology and Climatology*. 53 (12): 2805-2822. DOI: 10.1175/JAMC-D-14-0016.1.

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