



Historical Daily Satellite based Rainfall Data for Flood and Drought Hazard Management in Southern Africa.

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The development of high spatial and temporal resolution historical rainfall databases is vital for effective hazard and disaster management of floods and droughts, in order to zonate at risk regions and to allow calibration of process models for now and forecasting. This paper describes a new high-resolution multi-platform, multi-sensor satellite rainfall product for a region highly vulnerable to drought and flood hazards, namely southern Africa. The dataset covers the period 1993-2002, inclusively. The Microwave Infra-Red Algorithm (MIRA) employed to generate the rainfall estimates combines high spatial and temporal resolution Meteosat infrared data with infrequent Special Sensor Microwave Imager (SSM/I) overpasses. A transfer function relating Meteosat thermal infrared cloud brightness temperatures to SSM/I rainfall estimates is derived using co-located data from the two instruments and then applied to the full coverage of the Meteosat data. An extensive continental scale validation against synoptic station data of both the daily MIRA precipitation product and a normalized geostationary IR-only GOES Precipitation Index (GPI) demonstrates a consistent advantage using the former over the latter, for rain delineation. Current and potential uses for the resulting high-resolution daily rainfall dataset will be discussed.