

GLOBALLY GRIDDED SATELLITE (GRIDSAT) OBSERVATIONS FOR CLIMATE STUDIES

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INTRODUCTION

This poster presents a short summary of the Gridded Satellite (GridSat) dataset that is described in a manuscript recently submitted to *BAMS* (Knapp et al. 2011). Those interested can contact the author for a copy of this manuscript.

GridSat data and documentation are available at <http://www.ncdc.noaa.gov/oa/gridsat/>

SUMMARY

Geostationary satellites have provided routine, high temporal resolution Earth observations since the 1970s. Despite the long period of record, use of these data in climate studies has been limited for numerous reasons, among them: there is no central archive of geostationary data for all international satellites, full temporal and spatial resolution data are voluminous, and diverse calibration and navigation formats encumber the uniform processing needed for multi-satellite climate studies. The International Satellite Cloud Climatology Project set the stage for overcoming these issues by archiving a subset of the full resolution geostationary data at ~10 km resolution at 3 hourly intervals since 1983. Recent efforts at NOAA's National Climatic Data Center to provide convenient access to these data include remapping the data to a standard map projection, recalibrating the data to optimize temporal homogeneity, extending the record of observations back to 1980, and reformatting the data for broad public distribution. The Gridded Satellite (GridSat) dataset includes observations from the visible, infrared window, and infrared water vapor channels. Data are stored in the netCDF format using standards that permit a wide variety of tools and libraries to quickly and easily process the data. A novel data layering approach, together with appropriate satellite and file metadata, allows users to access GridSat data at varying levels of complexity based on their needs. The result is a climate data record

already in use by the meteorological community. Examples include reanalysis of tropical cyclones, studies of global precipitation, and detection and tracking of the intertropical convergence zone.

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References

Knapp, K. R., and Coauthors, 2011: Globally gridded satellite (GridSat) observations for climate studies. *Bulletin of the American Meteorological Society*, **Submitted**.

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