

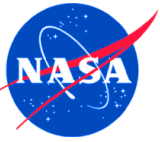


# **GES DISC use of GCMD and MWS**

Bruce Vollmer

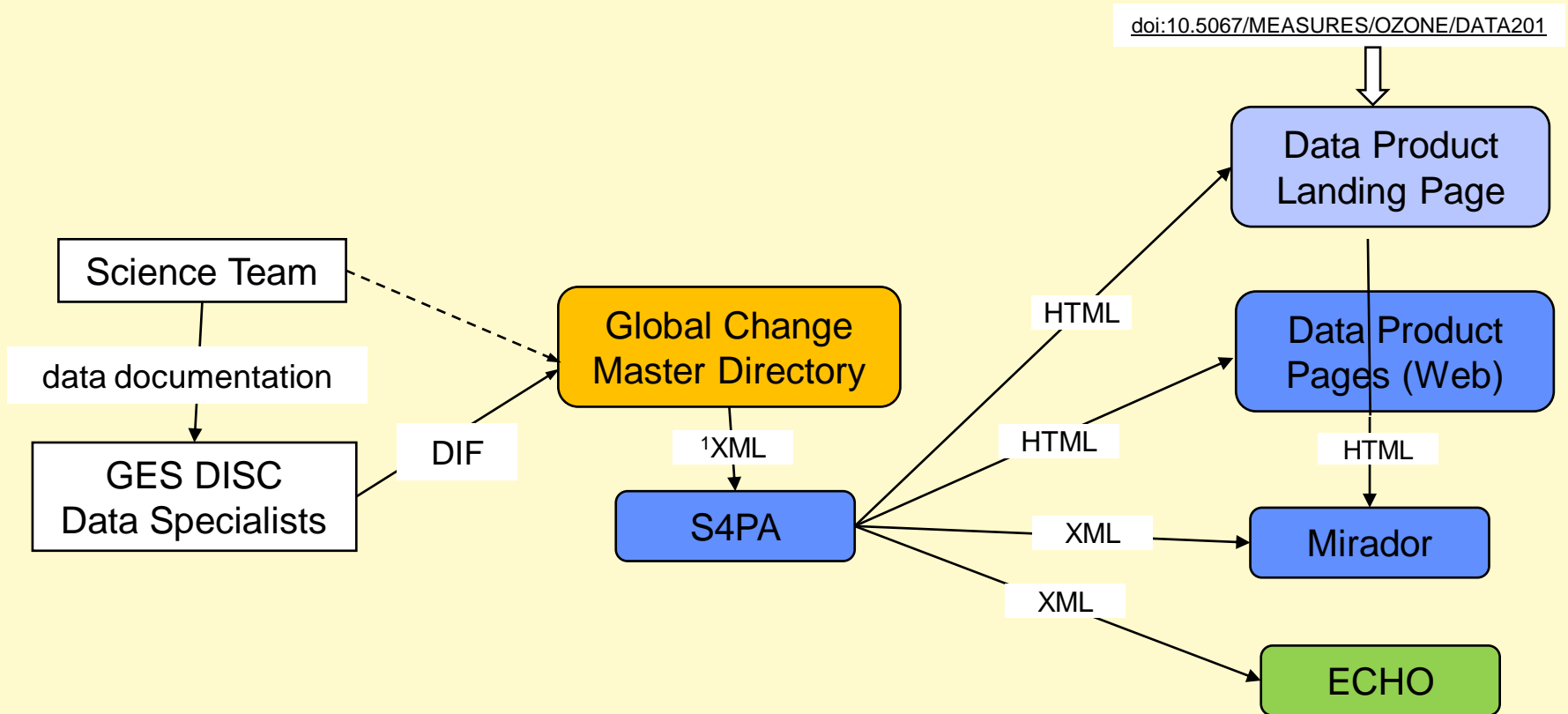
Goddard Earth Sciences Data and Information Services Center

ESIP Winter Meeting 2013



# GES DISC Metadata Architecture

## Collection Level Metadata



<sup>1</sup>GCMD DIF retrieval

[http://gcmdservices.gsfc.nasa.gov/mws/dif/GES\\_DISC\\_AIRX2RET\\_v005](http://gcmdservices.gsfc.nasa.gov/mws/dif/GES_DISC_AIRX2RET_v005)



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# Mirador

Data Access Made Simple

## PRODUCT SUMMARY

**Data Set Short Name:** GSSTF\_NCEP

**Data Set Long Name:** NCEP/DOE Reanalysis II in HDF-EOS5, for GSSTF2b, 1x1 deg Daily grid

**Data Set Version:** 2b

**Data Set Creator:** Shie, C.-L., K. Hilburn, L. S. Chiu, R. Adler, H Lin, E. Nelkin, and J. Ardizzone

**Data Set Publisher:** Goddard Earth Science Data and Information Services Center (GES DISC)

**Data Set Release Place:** Greenbelt, MD, USA

**Horizontal Resolution:** 1 degree x 1 degree

**Temporal Resolution:** 24 hr

**Temporal Coverage:** 1987-07-01 - 2009-01-01

**Parameters:** SEA LEVEL PRESSURE, ATMOSPHERIC HEATING, HEAT FLUX, RADIATIVE FLUX, AIR TEMPERATURE, SKIN TEMPERATURE, SURFACE AIR TEMPERATURE, EVAPORATION, HUMIDITY, PRECIPITABLE WATER, WATER VAPOR, SURFACE WINDS, TURBULENCE, WIND STRESS, CONDUCTION, EVAPORATION, HEAT FLUX, SEA LEVEL PRESSURE, SEA SURFACE TEMPERATURE, SURFACE WINDS, TURBULENCE, WIND STRESS

**User's Guide:** [README\\_GSSTF2b.pdf](#)

## PRODUCT DESCRIPTION

These data are the Goddard Satellite-based Surface Turbulent Fluxes Version-2b (GSSTF2b) Dataset recently produced through a MEaSUREs funded project led by Dr. Chung-Lin Shie (UMBC/GEST, NASA/GSFC), converted to HDF-EOS5 format. The stewardship of this HDF-EOS5 dataset is part of the MEaSUREs project, <http://earthdata.nasa.gov/our-community/community-data-system-programs/measures-projects/surface-turbulent-fluxes-esdr> <http://earthdata.nasa.gov/our-community/community-data-system-programs/measures-projects>

This is a Daily (24-hour) product; data are projected to equidistant Grid that covers the globe at 1x1 degree cell size, resulting in data arrays of 360x180 size.

The input data sets used for this recent GSSTF production include the upgraded and improved datasets such as the Special Sensor Microwave Imager (SSM/I) Version-6 (V6) product of brightness temperature [Tb], total precipitable water [W], and wind speed [U] produced by the Wentz of Remote Sensing Systems (RSS), as well as the NCEP/DOE Reanalysis-2 (R2) product of sea skin temperature [SKT], 2-meter air temperature [Tair], and sea level pressure [SLP].

These HDF-EOS5 files contain one grid that have 4 variables:

"SST" 'sea surface skin temperature' (C)

"Psea\_level" 'sea level pressure' (hPa)

"Tair\_2m" '2m air temperature' (C)

"Qsat" 'sea surface saturation humidity' (g/kg)

The double-quoted labels are the short names of the data fields in the HDF-EOS5 files.

The GSSTF2b was originally released in binary format, and more details on the methodology, and relevant references, can be found here:

<ftp://meso-a.gsfc.nasa.gov/pub/shieftp/fluxdata/Shie-et-al-COAA2010.pdf>



## MEaSUREs at GES DISC

Making Earth Science Data Records for Use in Research Environments

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### GSSTF: Goddard Satellite-Based Surface Turbulent Fluxes, Daily Grid

- Description
- Data Access
- Summary
- Documentation
- Variables

#### Data Citation

To cite the data in publications:  
Shie, C.-L., K. Hilburn, L. S. Chiu, R. Adler, I-H Lin, E. Nelkin, J. Ardizzone, and S. Gao (2012), *Goddard Satellite-Based Surface Turbulent Fluxes, Daily Grid, version 3*, Edited by Andrey Savtchenko., Greenbelt, MD, USA:Goddard Earth Science Data and Information Services Center (GES DISC), Accessed Enter User Data Access Date at doi:10.5067/MEASURES/GSSTF/DATA301

#### Product Description

These data are the Goddard Satellite-based Surface Turbulent Fluxes Version-3 (GSSTF3) Dataset recently produced through a MEaSUREs funded project led by Dr. Chung-Lin Shie (UMBC/GEST, NASA/GSFC), converted to HDF-EOS5 format. The stewardship of this HDF-EOS5 dataset is part of the MEaSUREs project,

- <http://earthdata.nasa.gov/our-community/community-data-system-programs/measures-projects/surface-turbulent-fluxes-esdr>
- <http://earthdata.nasa.gov/our-community/community-data-system-programs/measures-projects>

This suite of GSSTF version 3 products is the 0.25x0.25 deg resolution version of the GSSTF 2c collections. It does not contain, however, the "WB" variable - 'lowest 500-m precipitable water' (g/cm\*\*2).

This is the Daily (24-hour) product; data are projected to equidistant Grid that covers the globe at 0.25 degree cell size, resulting in data arrays of 1440x720 size.

As in previous versions, the daily fluxes have first been produced for each individual available SSM/I satellite tapes (e.g., F08, F10, F11, F13, F14 and F15). Then, the Combined daily fluxes are produced by averaging (equally weighted) over available flux data/files from various satellites. These Combined daily flux data are considered as the "final" GSSTF, Version 3, and are stored in this HDF-EOS5 collection.



MEASURES PROJECTS

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SEE ALSO...

- MEaSURES | NASA  
The NASA MEaSURES Projects Web site
- MEaSURES | LP DAAC  
The USGS Land Processes Distributed Active Archive Center (LP DAAC) MEaSURES Data Web site
- MEaSURES | PO.DAAC  
JPL's Physical Oceanography Distributed Active Archive Center (PO.DAAC) MEaSURES Data Web site
- MEaSURES | NSIDC  
NSIDC DAAC Portal for MEaSURES

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### GSSTF: Goddard Satellite-Based Surface Turbulent Fluxes, Daily Grid

Description	Data Access	Summary	Documentation	Variables
<p><b>Data Access</b></p> <p>Data Service Name: MIRADOR            Data Service Description: Search, visualize, subset, and download data in HDF-EOS5            Data Service Access URL: <a href="http://mirador.gsfc.nasa.gov/cgi-bin/mirador/homepageAlt.pl?keyword=GSSTF+AND+%22Version+3%22">http://mirador.gsfc.nasa.gov/cgi-bin/mirador/homepageAlt.pl?keyword=GSSTF+AND+%22Version+3%22</a></p> <p>Data Service Name: ON-LINE ARCHIVE            Data Service Access URL: <a href="ftp://measures.gsfc.nasa.gov/data/s4pa/GSSTF/GSSTF_3/">ftp://measures.gsfc.nasa.gov/data/s4pa/GSSTF/GSSTF_3/</a></p> <p>Data Service Name: REVERB            Data Service Description: Refine your granule search with ECHO's next generation Earth Science discovery tool (Reverb) using information from this record.            Data Service Access URL: <a href="http://reverb.echo.nasa.gov/reverb/#utf8=%E2%9C%93&amp;spatial_map=satellite&amp;spatial_type=rectangle&amp;keywords=GES_DISC_GSSTF_3">http://reverb.echo.nasa.gov/reverb/#utf8=%E2%9C%93&amp;spatial_map=satellite&amp;spatial_type=rectangle&amp;keywords=GES_DISC_GSSTF_3</a></p>				



# MEaSUREs at GES DISC

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### SEE ALSO...

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- MEaSUREs | NSIDC  
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## GSSTF: Goddard Satellite-Based Surface Turbulent Fluxes, Daily Grid

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The variables in each of the data files include the following:

Variable Name	Description	Units
DQ	sea-air humidity difference	g/kg
E	latent heat flux	W/m**2
H	sensible heat flux	W/m**2
Qair	surface air (~10-m) specific humidity	g/kg
STu	zonal wind stress	N/m**2
STv	meridional wind stress	N/m**2
Tot_Precip_Water	total precipitable water	g/cm**2
U	10-m wind speed	m/s





## Future Work

→ Extended Metadata

- ` Summary description of variables in data files

→ Use MWS to submit DIFs to GCMD

- ` <http://gcmdservices.gsfc.nasa.gov/mws/validator>
- ` <http://gcmdservices.gsfc.nasa.gov/mws/publisher>

→ Machine readable landing pages

- ` ESIP Preservation and Stewardship discussions



Questions?