Calibrated Enhanced-Resolution Passive Microwave Daily EASE-Grid 2.0 Brightness Temperature ESDR, Version 2

USER GUIDE

How to Cite These Data

As a condition of using these data, you must include a citation:

Brodzik, M. J., D. G. Long, M. A. Hardman. 2024. *Calibrated Enhanced-Resolution Passive Microwave Daily EASE-Grid 2.0 Brightness Temperature ESDR, Version 2.* [Indicate subset used]. Boulder, Colorado USA. NASA National Snow and Ice Data Center Distributed Active Archive Center. https://doi.org/10.5067/19LHYLUXZ22M . [Date Accessed].

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FOR CURRENT INFORMATION, VISIT https://nsidc.org/data/NSIDC-0630

National Snow and Ice Data Center

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1 DATA DESCRIPTION

The Calibrated Enhanced-Resolution Passive Microwave Daily EASE-Grid 2.0 Brightness Temperature ESDR, Version 2 data set is a multi-sensor Level 3 Earth Science Data Record (ESDR) with improvements upon Version 1 in cross-sensor calibration and quality checking, modern file formats, better quality control, improved projection grids, and local time-of-day (LTOD) processing (Brodzik et al., 2024). These data are gridded to three EASE-Grid 2.0 projections (North Azimuthal, South Azimuthal, and Cylindrical) and include enhanced-resolution imagery, as well as coarse-resolution, averaged imagery. Inputs include brightness temperature data from the following instruments:

- Scanning Multichannel Microwave Radiometer (SMMR) on NIMBUS-7
- Special Sensor Microwave/Imager (SSM/I) on DMSP 5D-2/F8, F10, F11, F13, F14, DMSP 5D-3/F15
- Special Sensor Microwave Imager/Sounder (SSMIS) on DMSP 5D-3/F16, F17, F18, F19
- Advanced Microwave Scanning Radiometer - Earth Observing System (AMSR-E) on AQUA
- Advanced Microwave Scanning Radiometer 2 (AMSR2) on GCOM-W1

Reprocessing of NSIDC-0630 Version 1 data to Version 2 will occur in phases, with data from different sensors and years made available over time beginning in May 2024. Data from all sensors for all of 2021-2023 and January through March of 2024 will become available first, followed by data from AMSR2 for May 2012 through December 2023. Next, all sensors will undergo forward processing, followed by back processing. While this reprocessing effort is underway, users are strongly discouraged from combining Version 1 and Version 2 data. The two versions have undergone different calibration rendering them incompatible. When reprocessing is complete and all Version 2 data is available, Version 1 data will no longer be accessible.

1.1 Parameters

The parameters for this data set are listed in Table 1.

Table 1. Parameters

Parameter	Description	Fill Value	Missing Value
TB	Brightness temperature	0.0	600.00
TB_time	Average time of the measurements used to derive TB	-32768	Not used
TB_std_dev	Standard deviation of the measurements used to derive TB	655.35	655.34
TB_num_samples	Number of measurements used to derive TB	0	Not used
Incidence_angle	Average incidence angle of the measurements used to derive TB	-0.01 (°)	Not used

1.2 File Information

1.2.1 Format

The data are in netCDF (.nc) format, using CF 1.6 (Climate and Forecast) and ACDD 1.3 (Attribute Conventions for Dataset Discovery) metadata conventions.

1.2.2 Directory Structure

For users retrieving data via direct HTTPS data access, the directories are organized by the date of the earliest data in them. The three equal-area projection grids are here denoted as Northern, Southern, and Temperate/Tropical. Files for the Temperate/Tropical grids include data from 00:00.00 to 23:59.99, so all data correspond exactly to the date of file. For the Northern and Southern grid files, the files include data that may begin up to 6 hours earlier the day before and possibly 6 hours into the following day. These files are placed in the directory that matches the beginning of the data in the file, not the filename date.

For example, input data for a file from day X starts several hours prior to midnight UTC on day X. This file will be in the directory for day X-1 instead of the directory for day X. Similarly, if input data for a file from day X begins several hours after midnight UTC on day X+1, it will be in the directory for day X+1.

Users who access the data through Earthdata Search are not affected by this organization method. A search for a given date range will retrieve all files corresponding to that date range, there is not a need to search one day or after the desired range.

1.2.3 File Contents

All parameters listed in Table 1 are included in the netCDF files, in addition to x (projected coordinate), y (projected coordinate), and time (days since 01 January 1972) variables.

Figures 1-3 are examples of AMSR2 data from 20 March 2024. There is one image per projection (Southern, Temperate/Tropical, and Northern), with their spatial resolutions varying according to the frequency of the measurements.

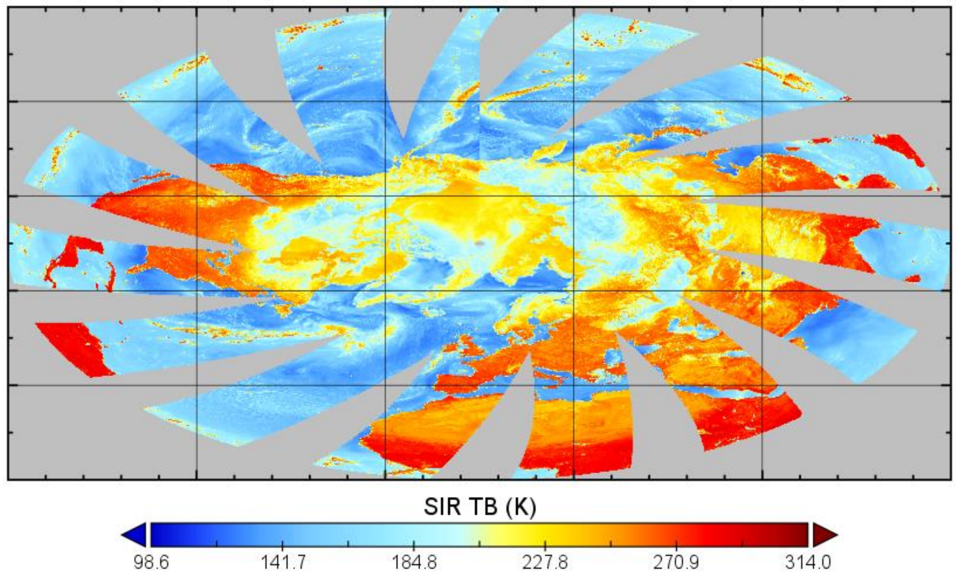

Figure 1. Northern Hemisphere sample image from file NSIDC0630_SIR_EASE2_N3.125km_GCOMW1_AMSR2_M_36H_20240320_2403281930_v2.0.nc. The image shows the morning 36 GHz H-polarized TB (in Kelvin) at 3.125 km Enhanced Resolution; TB was derived using the rSIR method.

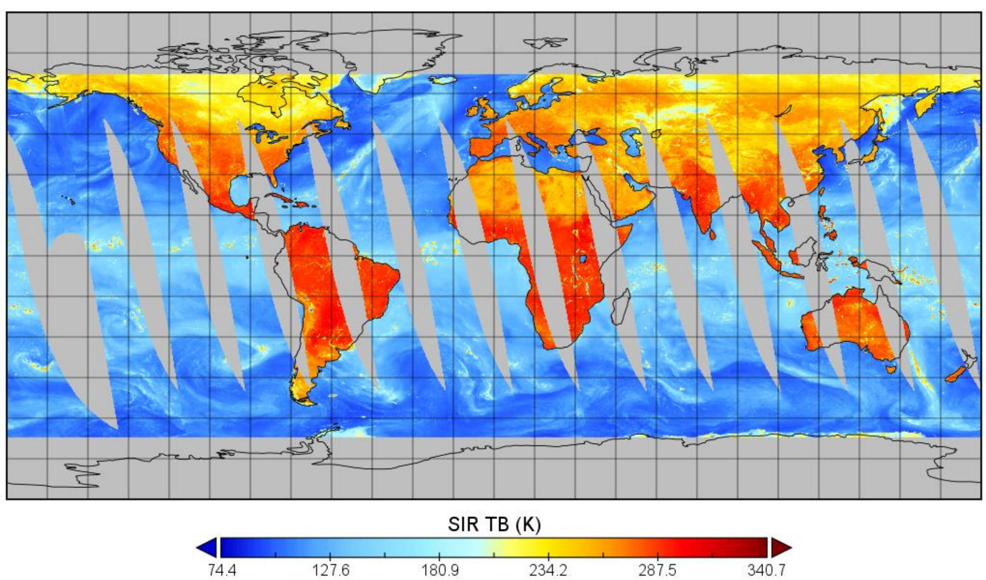

Figure 2. Temperate/Tropical sample image from file NSIDC0630_SIR_EASE2_T6.25km_GCOMW1_AMSR2_A_18H_20240320_2403281920_v2.0.nc. The image shows the ascending node 18 GHz H-polarized TB (in Kelvin) at 6.25 km Enhanced Resolution; TB was derived using the rSIR method.

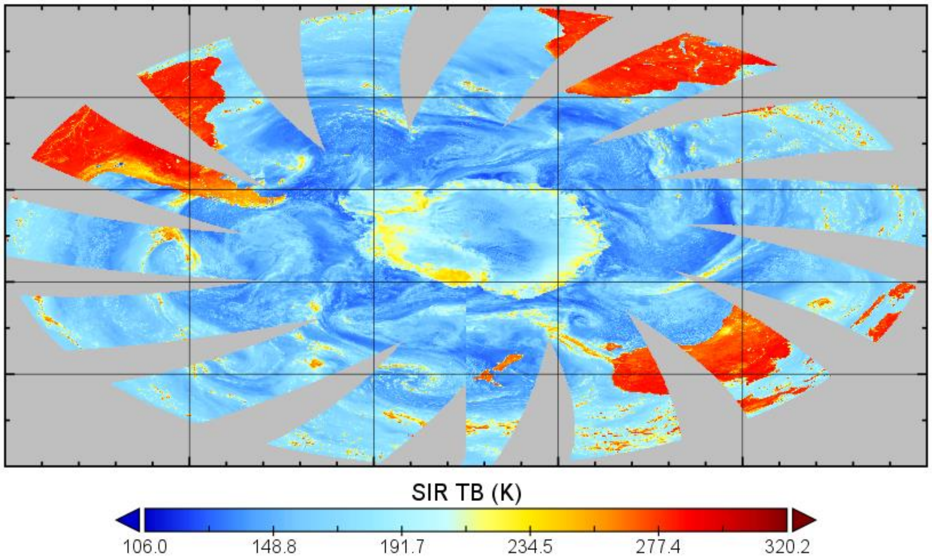

Figure 3. Southern Hemisphere sample image from file NSIDC0630_SIR_EASE2_S3.125km_GCOMW1_AMSR2_M_36H_20240320_2403281916_v2.0.nc. The image shows the morning 36 GHz H-polarized TB (in Kelvin) at 3.125 km Enhanced Resolution; TB was derived using the rSIR method.

1.2.4 Naming Convention

Files are named according to the following convention and as described in Table 2:
NSIDC0630_[algorithm]_EASE2_[GXXXXkm]_[platform_sensor]_[pass]_[channel]_
[date]_[processing_date]_[version].nc

Example file name:
NSIDC0630_GRD_EASE2_N25km_F17_SSMIS_M_19V_20230701_2403211833_v2.0.nc

Table 2. File Name Variables

Variable	**Description**
NSIDC0630	NSIDC unique data set identifier
Algorithm	Specifies the algorithm used for the image reconstruction: GRD = drop-in-the-bucket (25 km grids) SIR = radiometer version of Scatterometer Image Reconstruction (enhanced-resolution grids)
EASE2	EASE2-Grid 2.0 projection
GXXXXkm	Grid and resolution of data in the file: Grid = Northern (N), Southern (S), or Temperate/Tropical (T) Resolution (in km) = ranges from 3.125 to 25 km

platform_sensor	Satellite platform id and sensor: F08_SSMI AQUA_AMSR-E F10_SSMI GCOMW1_AMSR2 F11_SSMI F16_SSMIS F13_SSMI F17_SSMIS F14_SSMI F18_SSMIS F15_SSMI F19_SSMIS NIMBUS7_SMMR
Pass	The direction or LTOD of the satellite passes used: A = Ascending (T grids only) D = Descending (T grids only) M = Morning LTOD (N or S grids only) E = Evening LTOD (N or S grids only)
Channel	Channel ID; differs by sensor: 2-digit frequency and 1-letter polarization (horizontal (H) or vertical (V)) [e.g. 37H]
Date	Reference date: 4-digit year, 2-digit month, 2-digit day [e.g. YYYYmmdd]
Processing date	Processing date and time: 2-digit year, 2-digit month, 2-digit day, 2-digit hour, 2-digit second (e.g., YYmmddhhss)
Version	Data set version number: vX.X for major/minor versions (e.g. v2.0)
.nc	NetCDF data formatting suffix

1.3 Spatial Information

1.3.1 Coverage

Each data file contains one of three EASE-Grid 2.0 spatial coverages:

- Northern Hemisphere Lambert azimuthal equal-area
- Southern Hemisphere Lambert azimuthal equal-area
- Temperate/Tropical cylindrical equal-area projection (bounded by +/- 67° latitude).

1.3.2 Resolution

Each channel is processed at standard and enhanced resolutions. The standard grid resolution is 25 km, with enhanced-resolution grids defined in a nested fashion in powers of two: 12.5 km, 6.25 km, and 3.125 km (see Figure 4). All channels are gridded to 25 km, with higher resolutions dependent on channel frequency:

- Frequencies below 12 GHz are available at 25 km (standard) and 12.5 km (enhanced).
- Frequencies between 12 and 30 GHz are available at 25 km (standard) and 6.25 km (enhanced).
- Frequencies 30 GHz and above are available at 25 km (standard) and 3.125 km (enhanced).

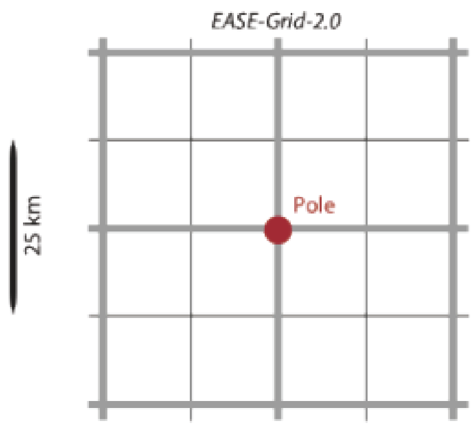

Figure 4. EASE-Grid 2.0 nesting relationship for 25 km and 12.5 km azimuthal grids at the pole. All Calibrated Enhanced Resolution Brightness Temperature (CETB) grids are nested analogously.

1.3.3 Geolocation

The data are gridded to EASE-Grid 2.0 projections, at various coverages and spatial resolutions. For more details on EASE-Grid 2.0, please refer to the EASE Grids web pages.

1.4 Temporal Information

1.4.1 Coverage

Data are available from late October 1978 to present, though the exact temporal coverage varies by input sensor. Sensors that continue to operate are updated daily. See Table 3 for the temporal availability by sensor.

Table 3. Temporal Coverage by Sensor

Sensor	Platform	Begin Coverage	End Coverage *
AMSR-E	AQUA	01 June 2002	04 October 2011
AMSR2	GCOM-W1	18 May 2012	Present
SSM/I	F08	07 September 1987	31 December 1991
	F10	08 December 1990	14 November 1997
	F11	03 December 1991	16 May 2000
	F13	03 May 1995	19 November 2009
	F14	07 May 1997	23 August 2008
	F15	23 February 2000	09 August 2021
SSMIS	F16	01 November 2005	Present
	F17	01 March 2008	Present
	F18	08 March 2010	Present
	F19	27 November 2014	09 February 2016
SMMR	Nimbus	25 October 1978	20 August 1987
* End Coverage represents the end date for the majority of the granules.			

The three SSMIS sensors that continue to operate (F16, F17 and F18) are updated approximately daily within 24 hours of data acquisition.

The SMMR data are not cross-calibrated with the SSM/I-SSMIS data and should be used with caution for time series analysis with the other sensors. Likewise, the AMSR-E and AMSR2 images from the 6.9 GHz sensor channel are derived from a different input data producer using different cross-calibration methods and should be analyzed separately from the remaining sensors. The input data for SSM/I and SSMIS, as well as AMSR2 and AMSR from all sensor channels except 6.9 GHz, are calibrated to GMI on the GPM Core Observatory.

1.4.2 Resolution

Temporal resolution is twice daily. Temperate/Tropical grids are separated by ascending/descending passes, while the Northern and Southern grids are separated by local time of day (LTOD).

Table 4 shows the beginning and ending times for the LTOD morning/evening split in hours after UTC midnight on the day of processing. For all platforms except AMSR-E, the LTOD split times are the same for the Northern and Southern hemispheres. All of the Northern and Southern grids in the data set were processed with these times. These values are stored as part of the metadata in the

Calibrated Enhanced Resolution Brightness Temperature (CETB) files as an attribute of the TB data.

Table 4. LTOD Times

Platform	Year	Morning start time	Morning end time	Evening start time	Evening end time
F08	All years	0.0	12.0	12.0	24.0
F10	1990-1993	2.0	14.0	14.0	26.0
	1994	3.0	15.0	15.0	27.0
	1995-1997	4.0	16.0	16.0	28.0
F11	All years	0.0	12.0	12.0	24.0
F13	All years	0.0	12.0	12.0	24.0
F14	1997-2001	3.0	15.0	15.0	27.0
	2002-2004	2.0	14.0	14.0	26.0
	2005-2008	0.0	12.0	12.0	24.0
F15	2000-2005	3.0	15.0	15.0	27.0
	2006	2.0	14.0	14.0	26.0
F16	2005-2007	3.0	15.0	15.0	27.0
	2008-2009	2.0	14.0	14.0	26.0
	2010-2011	1.0	13.0	13.0	25.0
	2012-2013	0.0	12.0	12.0	24.0
	2014	-1.0	11.0	11.0	23.0
	2015-2022	-2.0	10.0	10.0	22.0
	2023-2024	-1.0	11.0	11.0	23.0
F17	All years	0.0	12.0	12.0	24.0
F18	2010-2020	0.0	12.0	12.0	24.0
	2021-2022	-1.0	11.0	11.0	23.0
	2023-2024	-2.0	10.0	10.0	22.0
F19	All years	0.0	12.0	12.0	24.0
SMMR	All years	6.0	18.0	18.0	30.0
AMSR-E	All years NH	5.0	17.0	17.0	29.0

	All years SH	8.0	20.0	20.0	32.0
AMSR2	All years	-4.0	8.0	8.0	20.0

2 DATA ACQUISITION AND PROCESSING

2.1 Background

The following sections describe CETB gridding algorithms. Please refer to Long and Brodzik (2016) for the theory of reconstruction techniques and complete details of the radiometer form of the Scatterometer Image Reconstruction (rSIR). The algorithm theoretical basis document (ATBD) for this data product (Brodzik et al., 2024) also contains more details.

2.1.1 Coarse Resolution (GRD) Gridding Algorithms

The CETB standard resolution gridding procedure is a simple, “drop-in-the-bucket” average. The resulting data grids are designated GRD data arrays. For the "drop-in-the-bucket" gridding algorithm, the key information required is the location of the measurement. The center of each measurement geolocation is mapped to an output-projected grid cell. All measurements within the specified time period that fall within the bounds of a particular grid cell are averaged. This is the reported TB value for this grid cell. Ancillary variables contain the number and standard deviation of included samples. The effective spatial resolution of the GRD product is defined by a combination of the grid cell size and spatial extent of the 3dB antenna footprint size. Figure 5 provides a graphical representation of the standard resolution (25 km) of GRD measurements. A 25 km grid resolution is used for all GRD products regardless of the native sensor field of view. Some channels on sensors have smaller footprints and can be gridded to finer grid resolution through “drop-in-the-bucket.”

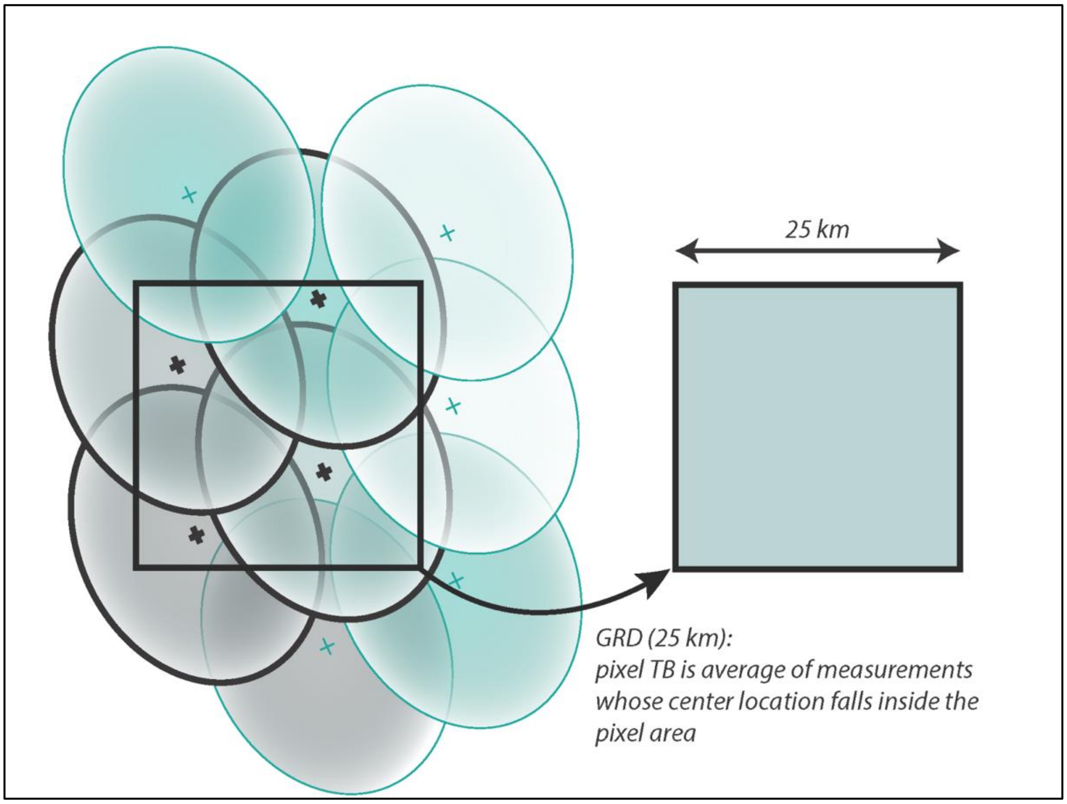

Figure 5. GRD 25 km Resolution

2.1.2 The Radiometer Version of the Scatterometer Image Reconstruction (rSIR) Algorithm

In addition to the standard GRD resolution (25 km), each channel is also available at one nested, enhanced resolution (12.5 km, 6.25 km, or 3.125 km); see

Table 5 for more details. Enhanced resolutions are generated using the radiometer version of the Scatterometer Image Reconstruction (rSIR) algorithm. The rSIR algorithm defines a group of grid cells centered at each grid point. Each grid cell is then weighted based on the Measurement Response Function (MRF) to estimate the TB at the enhanced resolution location. The MRF is determined by the antenna gain pattern (which is unique for each sensor and sensor channel, and may vary with scan angle), the scan geometry (notably the antenna scan angle), and the integration period. Figure 6 provides a graphical representation of the enhanced resolution of rSIR measurements. For more details, see Long and Brodzik (2016) or Brodzik and Long (2018).

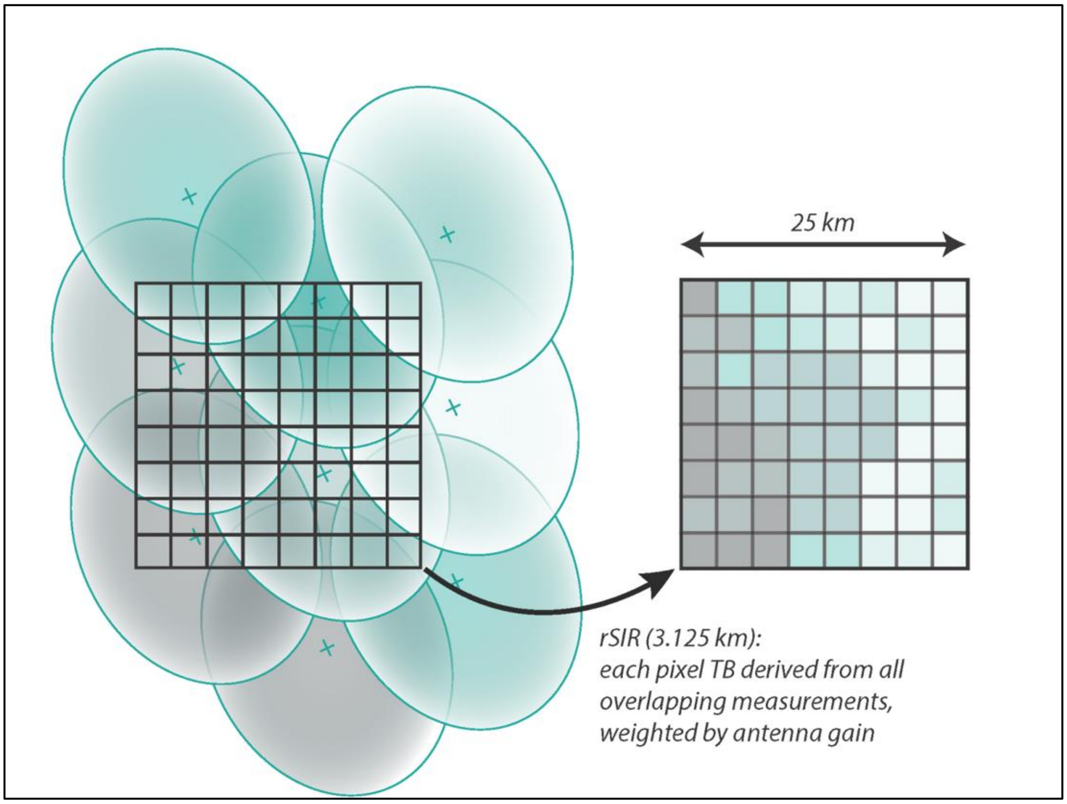

Figure 6. rSIR 3.125 km Resolution

Table 5. CETB Enhanced Resolution Grids

Sensor	Frequency (GHz)	Enhanced Resolution Grid (km)		
		12.5	6.25	3.125
SMMR	6.6	X		
	10.7	X		
	18.0		X	
	21.0		X	
	37.0			X
SSM/I	19.3		X	
	22.2		X	
	37.0			X
	85.5			X
SSMIS	19.3		X	
	22.2		X	
	37.0			X
	91.7			X

AMSR-E	6.9	X		
	10.7	X		
	18.7		X	
	23.8		X	
	36.5			X
	89.0			X
AMSR2	6.9	X		
	10.7	X		
	18.7		X	
	23.8		X	
	36.5			X
	89.0			X

2.2 Acquisition

Table 6 lists all input data sets.

Table 6. Input Data Sources

Sensor	Temporal Coverage	Input Swath Data
SMMR	1978-1987	Nimbus-7 SMMR Pathfinder Brightness Temperatures (NSIDC-0630, Version 1)
SSM/I-SSMIS	1987-present	SSM/I-SSMIS Brightness Temperatures (F-08, F-10, F-11, F-13, F-14, F-15, F-16, F-17, F-18)
AMSR-E	2002-2011	AMSR-E/Aqua L1C Global Swath Spatially-Resampled Brightness Temperatures (10.7, 18.7, 23.8, 36.5, and 89.0 GHz, AMSR-E L1C)
	2002-2011	JAXA AMSR-2 on GCOM-W1 Common Calibrated Brightness Temperatures L1B (6.9 GHz, GCOM-W1)
AMSR2	2012-present	GPM AMSR-2 on GCOM-W1 Common Calibrated Brightness Temperatures L1C (10.7, 18.7, 23.8, 36.5, and 89.0 GHz, GCOM-W1)
	2012-present	JAXA AMSR-2 on GCOM-W1 Common Calibrated Brightness Temperatures L1B (6.9 GHz, GCOM-W1)

2.3 Processing

There are two general processing steps in generating the CETB product. These include data set pre-processing for spatial and temporal selection and gridding (both standard and enhanced resolutions).

2.3.1 Data Set Preprocessing

The first stage of processing includes ingesting the raw swath TB and performing initial data and temporal selections. Only the highest quality TB measurements are used to ensure the most reliable data set. Swath data are mapped to output grids by measurement geolocation and LTOD.

All of the CETB passive microwave sensors fly on near-polar, sun-synchronous satellites, which maintain an orbital plane with an orientation that is (approximately) fixed with respect to the sun. Thus, the satellite crosses the equator on its ascending (northbound) path at approximately the same LTOD. The resulting coverage pattern yields passes about 12 hours apart in LTOD at the equator. Most locations near the pole are observed several times per day. Analysis shows that the data from a single sensor fall into two LTOD ranges for polar measurements. The two periods are typically less than 4 hours long and spaced 8 or 12 hours apart. Significantly, due to the orbit repeat cycle, two succeeding days at any particular location may make measurements at different LTOD, and therefore, at different times during the diurnal cycle (Gunn, 2007), introducing undesired variability into a time series analysis.

The CETB azimuthal (Northern or Southern) grids are split into two images per day based on the LTOD approach of Gunn and Long (2008). This ensures that all measurements in any one image have consistent spatial/temporal relationships. Complete analysis of the LTOD split times by sensor and time period is included in Appendix E of the ATBD (Brodzik et al., 2024). The CETB adopts the LTOD division scheme for the Northern and Southern hemispheres. For the Temperate/Tropical grids the data are divided into ascending and descending passes.

Each file includes gridded arrays of the following variables: TB, number of contributing measurements, as well as the average time, standard deviation, and average incidence angle of contributing measurements used to derive the TB at each grid cell. This enables investigators to explicitly account for the LTOD temporal variation of the measurements included in a particular grid cell.

2.3.2 Gridding

CETB products are generated on standard resolution grids for all channels using a low-noise “drop-in-the-bucket” average (GRD algorithm), and enhanced-resolution grids using rSIR image reconstruction techniques (Long and Brodzik, 2016). For enhanced-resolution grids, the effective resolution depends on the number of measurements and the precise details of their overlap, orientation, and spatial locations; information about the antenna gain pattern, scan geometry, and integration period are required to compute the effective measurement response function (MRF). The MRF describes how much the emissions from a particular direction affect the observed TB value. For each sensor and channel, the MRF is modeled as a two-dimensional Gaussian using the 3-dB footprint size (Long and Brodzik, 2016). While Long and Brodzik (2016) use numerical simulation to analyze the theoretical resolution enhancement technique, Long et al. (2021) use actual CETB data to estimate effective resolution by sensor and channel. See

Table 7 for the field-of-view values.

Table 7. Sensor Channel Frequency and Effective Field of View

Sensor	Frequency (GHz)	Semi-major (km)	Semi-minor (km)
SMMR	6.6 H, V	121	79
	10.7 H, V	74	49
	18.0 H, V	44	29
	21.0 H, V	38	24
	37.0 H, V	21	14
SSM/I	19.3 H, V	69	43
	22.2 V	60	40
	37.0 V	37	28
	37.0 H	37	29
	85.5 H, V	15	13
SSMIS	19.3 H, V	72	44
	22.2 V	72	44
	37.0 H, V	44	26
	91.7 H, V	15	9
AMSR-E	6.9 H, V	75	43
	10.7 H, V	51	29
	18.7 H, V	27	16
	23.8 H, V	32	18
	36.5 H, V	14	8

	89.0 (H or V)	7	4
	89.0 (H or V)	6	4
AMSR2	6.9 H, V	62	35
	10.7 H, V	42	24
	18.7 H, V	22	14
	23.8 H, V	26	15
	36.5 H, V	12	7
	89.0 (H or V)	5	3

2.4 Quality, Errors, and Limitations

2.4.1 Empty Grid Cells in Images

In cases with no sensor footprint, center locations were mapped to the area of a grid cells, GRD images will occasionally have single grid cells with no data. Normally, rSIR images do not suffer from this problem, because the rSIR gain threshold is set to a value that almost always ensures at least one component measurement that can be used to derive the grid cell TB. However, beginning on 04 Nov 2004, the AMSR-E 89 GHz A-horn developed a permanent problem that resulted in a loss of observations for the remaining life of AMSR-E. After this date, the rSIR 3.125 km 89 GHz data does occasionally have missing grid cells (Beitsch et al., 2014).

2.4.2 No Data Values

CETB files are produced for every day in the temporal coverage of each sensor even if the data is missing. For dates with no data, data files exist with all variables set to "_FillValue."

2.4.3 Incomplete Image Reconstruction at Latitudinal Grid Boundaries

Not all possible input measurements were used in the image reconstruction at the high-latitude edges of the Temperate/Tropical grids and at the equatorial edges of the Northern and Southern grids. Although the reconstructed TB at these locations are not erroneous, they are not as accurate as the reconstructed TB that make use of all input measurements.

The user is encouraged to exercise caution when analyzing data within approximately 20 km of these boundaries. To access the most accurate image reconstruction results, the user is advised to use the Northern or Southern grids to analyze mid- to high-latitude regions, and the Temperate/Tropical grids to analyze regions near the equator. For example, when analyzing CETB 6.25 km rSIR Temperate/Tropical images, switch to the Northern grid to analyze images within 3 grid cells of the northern boundary. Analogously, when analyzing CETB 6.25 km rSIR Northern images, switch to the Temperate/Tropical grid to analyze images within 3 grid cells of the equator.

Note: the eastern and western boundaries of the Temperate/Tropical grids (i.e., 180º E and 180º W) do not exhibit this problem, as all input measurements were included in the image reconstruction at these locations.

2.4.4 DMSP-F17 37V Channel

Beginning in April 2016, TB values from the DMPS-F17 37V channel may have all 0 K or NaN values. These TB could not be computed because the data were missing or flagged as too low quality in the input file.

2.4.5 Quality

For a comparison to other passive microwave data sets, please see the Algorithm Theoretical Basis Document (Brodzik and Long, 2018).

2.5 Instrumentation

For a detailed description of the instruments used to acquire the data, see the following Technical References:

- SMMR, SSM/I, and SSMIS Sensors Summary
- AMSR-E Instrument Description
- AMSR2

3 SOFTWARE AND TOOLS

CETB netCDF Files contain comprehensive CF- and ACDD-compliant metadata that is understood by multiple software packages and reprojection tools. In particular, EPSG codes and proj4 strings are defined for the EASE-Grid 2.0 grids and projections, and GDAL tools can be used to easily translate CETB data arrays to GeoTIFF files (Brodzik et al., 2024).

Geolocation files for this data set are in netCDF (`.nc`) format and are located here: https://nsidc.org/data/nsidc-0772. File names indicate the grids for each file: Northern (N), Southern (S), or Temperate/Tropical (T). For example, EASE2_N12.5km.geolocation.v0.9.nc corresponds to the 12.5 km resolution grid in the Northern Hemisphere.

4 VERSION HISTORY

Table 8. Version History

Version	Date Implemented	Impacted Temporal Coverage	Description of Changes
2.0	16 July 2024	25 October 1978 to 16 July 2024	• Change in the input data streams for SSM/I, SSMIS, AMSR-E • Addition of AMSR2 data
1.5	23 September 2021	25 October 1978 to 23 September 2021	• Temporal update through present, derived from CSU ICDR • Ongoing updates for F16, F17, and F18 will now be produced to present • Corrected bug in GRD time arrays that was setting all pixels to the earliest time in the file.
1.4	26 May 2020	25 October 1978 to 30 December 2019	• Temporal update through 30 December 2019 for data derived from the SSM/I DMSP-F-15 sensor and the SSMIS DMSP-F16, -F17, and -F18 sensors • File-level metadata updated to acknowledge new funding sources and reflect changes to the data citation
1.3	14 June 2018	25 October 1978 to 14 June 2018	Reprocessing of all data to: • Correct erroneous Morning/Evening classifications • Adjust 85, 89, and 91 GHz channel thresholds • Extend Temperate grid processing period • Update LTOD in the metadata • Correct calendar year crossovers • Correct ascending and descending misclassifications • Correct LTOD shifts due to orbital drift • Correct split times for Northern grids

Version	Date Implemented	Impacted Temporal Coverage	Description of Changes
1.2	26 September 2017	25 October 1978 to 26 September 2017	For the AMSR-E-derived data, changes include: • Adding missing input data for the first day of the month in the Northern Hemisphere and Southern Hemisphere projections • Changing the size of the time dimension from 1 to "unlimited" • Adding files for dates with no data For SSMI-derived data, corrected the handling of QC flags to retain more data, eliminating only the flagged data in a given channel and taking care not to eliminate data in other channels Includes data derived from the following additional sensors: • SSM/I on DMSP-F15 • SSMIS on DMSP-F16 • SSMIS on DMSP-F17 • SSMIS on DMSP-F18 • SSMIS on DMSP-F19 • SMMR on Nimbus
1.1	03 May 2017	25 October 1978 to 03 May 2017	First public release. Includes data derived from the following additional sensors: • SSM/I on DMSP-F08 • SSM/I on DMSP-F10 • SSM/I on DMSP-F11 • SSM/I on DMSP-F13 • SSM/I on DMSP-F14
1.0	December 2016	25 October 1978 to December 2016	Internal release, only contained AMSR-E-derived data

5 RELATED DATA SETS

AMSR-E/Aqua Daily EASE-Grid Brightness Temperatures

Nimbus-7 SMMR Pathfinder Daily EASE-Grid Brightness Temperatures

6 RELATED WEBSITES

DMSP SSM/I-SSMIS Daily Polar Gridded Brightness Temperatures

NASA MEaSUREs Research Project: EASE-Grid 2.0 TB ESDR

Near-Real-Time DMSP SSM/I-SSMIS Daily Polar Gridded Brightness Temperature

Scatterometer Climate Record Pathfinder

7 REFERENCES

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8 DOCUMENT INFORMATION

8.1 Publication Date

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8.2 Date Last Updated

July 2024