CLPX-Satellite: AMSR-E Brightness Temperature Grids, Version 1

USER GUIDE

How to Cite These Data

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

Brodzik, M. J. (ed.). 2004. *CLPX-Satellite: AMSR-E Brightness Temperature Grids, Version 1.* [Indicate subset used]. Boulder, Colorado USA. NASA National Snow and Ice Data Center Distributed Active Archive Center. https://doi.org/10.5067/3QWDLEGYBB0T. [Date Accessed].

FOR QUESTIONS ABOUT THESE DATA, CONTACT NSIDC@NSIDC.ORG

FOR CURRENT INFORMATION, VISIT https://nsidc.org/data/NSIDC-0145

National Snow and Ice Data Center

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1   DETAILED DATA DESCRIPTION

This data set includes gridded passive microwave brightness temperatures. Data are provided for passive microwave frequencies at 6.9, 10.7, 18.7, 23.8, 36.5 and 89.0 GHz, separated by ascending and descending satellite passes, and include time files. Grid resolution is 25 km. The resampling method is inverse distance squared. Data are available in CLPX lrsa_geo720.0 and lrsa_utm25000 (see grid description). Temporal coverage is 1 February - 31 May 2003.

1.1 Format

There are 24 brightness temperature files per day for a given projection. Data are 2-byte unsigned integers, compressed, little-endian (i.e., PC or VAX) byte-order, representing temperatures in tenths of Kelvins. The fill value is 0.

There are two time files per day for a given projection. Data are 2-byte signed integers, representing minutes since midnight UTC. The fill value is -32768.

There are two geolocation files for each grid (geo and utm), with grid latitude and longitude coordinates. Data are 8-byte, little-endian, double-precision values, representing decimal degrees. File extension is .double.

1.2 File and Directory Structure

Data are provided in a compressed (tarred and zipped) file named nsidc0145_amsre_vxx.tgz, where xx represents the data release version number. Within this compressed file, data files are in the following directory structure:

```
geo/
  2003/
    02/
      ID2-AMSRE-B01-LRSA_GEO720.0.01.2003032A.06H, etc.
    03/
    04/
    05/
lrsa_geo720.0.lat.23x18x1.double
lrsa_geo720.0.lon.23x18x1.double

utm/
  2003/
    02/
```

```
        ID2-AMSRE-B01-LRSA_UTM25000.01.2003032A.06H, etc.
    03/
    04/
    05/
lrsa_utm25000.lat.17x17x1.double
lrsa_utm25000.lon.17x17x1.double
```

1.2.1   File Naming Convention

The compressed file is named `nsidc0145_amsre_vxx.tgz`, where xx represents the data release version number. Individual data files are named ID2-AMSRE-B01-ggg.vv.yyyydddp.ccc where

ID2: Brightness temperature interpolation method - inverse distance squared
AMSRE-B01: Source data - AMSR-E L2A version B01
ggg: grid name (LRSA_GEO720.0 or LRSA_UTM25000)
vv: 2-digit data version number
yyyy: 4-digit year
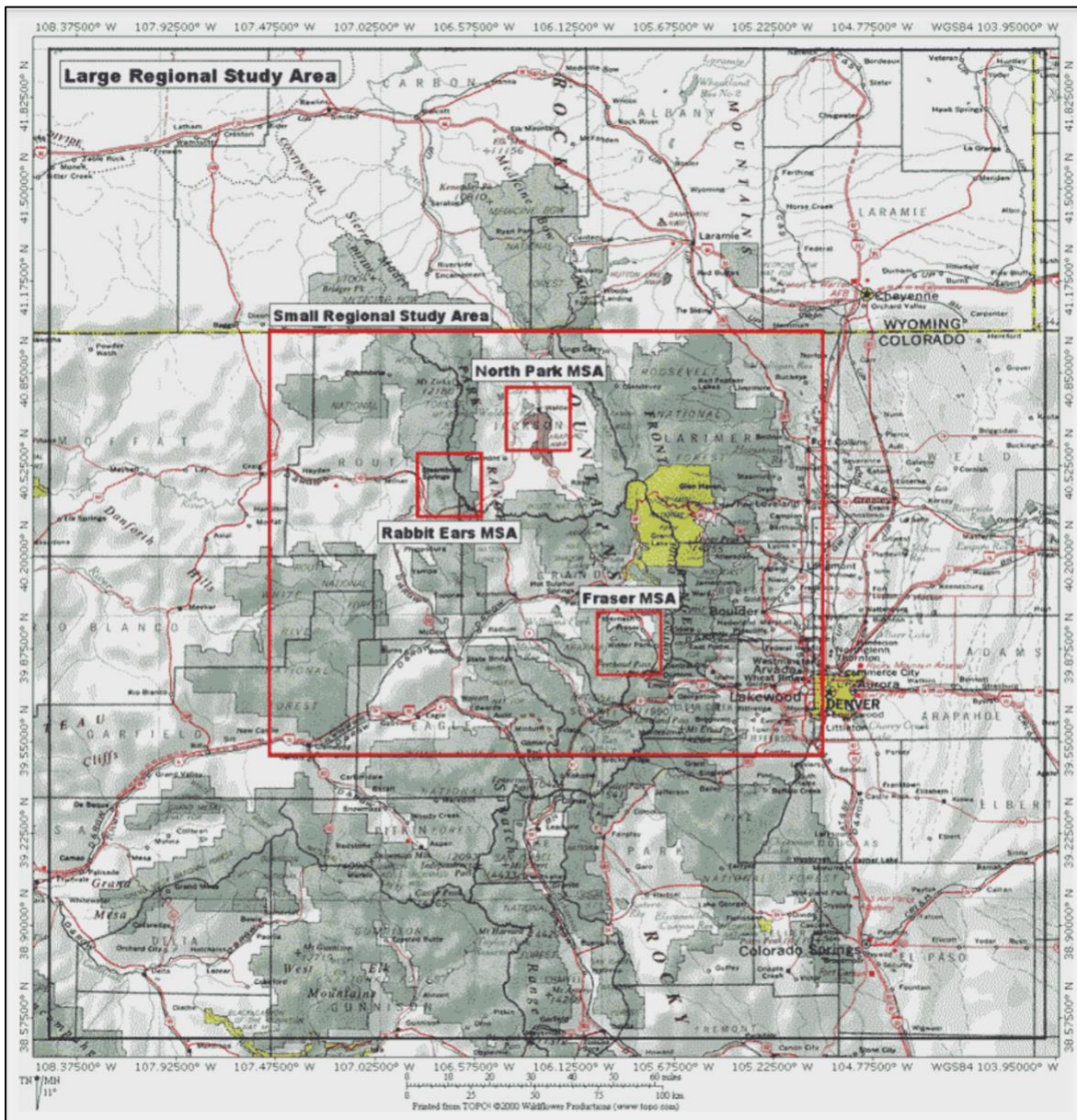**ddd**: 3-digit day of year
p: pass direction, one of {A(scending), D(escending)}
ccc: channel/polarization or time, one of {06H, 06V, 10H, 10V, 23H, 23V, 36H, 36V, 89H, 89V, TIM}

For example, the file called `ID2-AMSRE-B01-LRSA_UTM25000.01.2003150D.06H` contains 6 GHz, horizontally-polarized brightness temperatures, descending passes only, for day 150 (May 30), 2003, gridded to the CLPX 25 km UTM grid, using an inverse distance squared interpolation method. The designator '.01.' indicates this is version 1 processing of these data.

1.3 Spatial Coverage

The following map shows the CLPX LRSA:

1.3.1 Spatial Resolution

Latitude_Resolution: GEO720.0: 0.2 degrees

Longitude_Resolution: GEO720.0: 0.2 degrees

Latitude_Resolution: UTM25000: 25000m

Longitude_Resolution: UTM25000: 25000m

1.3.2 Projection and Grid Description

Geographic (GEO) Grid: 23 cols x 18 rows

UL: 42.05N, 108.55W

LR: 38.45N, 103.95W

Universal Transverse Mercator (UTM) Grid: 17 cols x 17 rows

UL: 42.16N, 108.93W

LR: 38.39N, 103.85W

Please see Geographic grid description and Universal Transverse Mercator grid description for lrsa_geo720.0 and lrsa_utm25000 grids, respectively.

1.4 Parameter or Variable

Parameters presented in this data set are passive microwave brightness temperatures (T_b).

2 SOFTWARE AND TOOLS

2.1 Quality Assessment

Selected brightness temperatures and time files have been visualized and manually inspected by data center operators before being archived and distributed.

3 REFERENCES AND RELATED PUBLICATIONS

Ashcroft, P., and F. Wentz. 2003. AMSR-E/Aqua L2A Global Swath Spatially-Resampled Brightness Temperatures V001 (September 2003). Boulder, CO, USA: National Snow and Ice Data Center. Digital media.

Ashcroft, P. and F. Wentz. 2000. Algorithm Theoretical Basis Document for the AMSR Level 2A Algorithm, Revised 03 November. Santa Rosa, CA, USA: Remote Sensing Systems.

Kelly, R. E, A. T. Chang, L. Tsang and J. L. Foster. 2003. A Prototype AMSR-E Global Snow Area and Snow Depth Algorithm. IEEE Transactions on Geoscience and Remote Sensing, 41(2), 230-242.

3.1 Related Data Collections

Cold Land Processes Field Experiment (CLPX)

DMSP SSM/I Pathfinder Daily EASE-Grid Brightness Temperatures

CLPX-Satellite: SSM/I Brightness Temperature Grids

4   CONTACTS AND ACKNOWLEDGMENTS

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5   DOCUMENT INFORMATION

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5.2 Date Last Updated

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