

DMSP-F8 SSM/I Pathfinder Global Level 2 Sea Ice Concentrations

Summary

These sea ice concentrations have been generated by applying the NASA Team algorithm to DMSP F8 SSM/I brightness temperature observations from 19 GHz (vertical and horizontal polarizations), 37- and 22 GHz vertical frequencies, calculating two gradients for use as weather filters. Coverage is global, but sea ice concentrations are only derived for ocean, ice and possible ice surfaces poleward of 35 degrees latitude, from 1 August 1987 through 30 November 1988. In the Northern Hemisphere, where data are not filtered due to weather effects, first-year and multiyear concentrations (in percent) are calculated; total ice concentration is taken as the sum of these two. Only total ice is calculated for the Southern Hemisphere. Data are available via FTP.

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1. Document Information

Document Type: Data Set Document

Revision Date: September 1994

Review Date: July 1994

2. Investigator

Investigator's Name and Title

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Title of Investigation

DMSP-F8 SSM/I Pathfinder Global Level 2 Sea Ice Concentrations

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Goodman, M. 2003. *DMSP-F8 SSM/I Pathfinder Global Level 2 Sea Ice Concentrations*. [indicate subset used]. Boulder, Colorado USA: NASA DAAC at the National Snow and Ice Data Center.

3.Data Set Information

Data Set Identification

DMSP-F8 SSM/I Pathfinder Global Level 2 Sea Ice Concentrations

Introduction

This data set originated at the Marshall Space Flight Center (MSFC) but is now held and distributed by the [National Snow and Ice Data Center](#).

MSFC Pathfinder Sea Ice (SI) data sets are created using the MSFC SSM/I Pathfinder daily HDF Antenna Temperature (TA) files. These antenna temperatures are a repackaged, reformatted version of data produced by Remote Sensing Systems of Santa Rosa, California. Recommended geolocation and antenna temperature corrections have been applied, and the data subjected to quality control measures. Data are stored in the Hierarchical Data Format (HDF) by orbit in daily files. A complete description of the [antenna temperature](#) files is available on-line.

Summary of Parameters

Coverage is global, but sea ice concentrations have only been derived for areas poleward of 35 degrees latitude, for surface types of ocean, ice and possible ice.

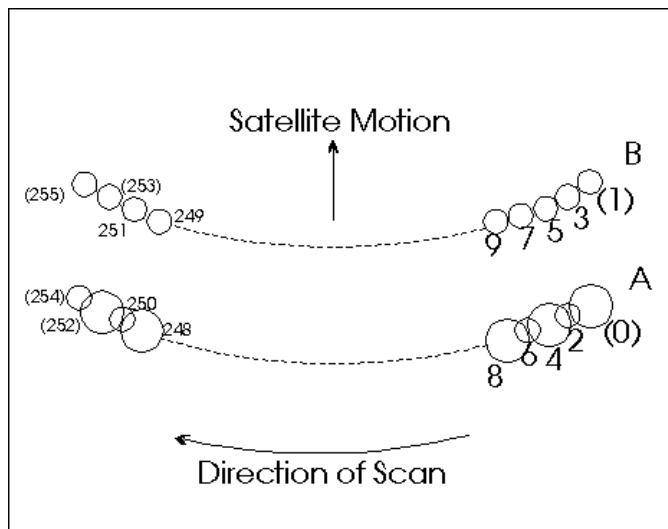
4.Theory of Measurements

Please review particulars of the [NASA Team Algorithm](#).

5.Equipment

Instrument Description

Please see [the SSM/I instrument description](#) accompanying related data set documents.



Swath data consists of A/B scan pairs. Small circles signify 85 GHz (A) channels, large circles stand for all (B) frequencies. Each pair includes 256 scene stations, numbered 0 to 256 (indicated).

6.Procedure

Data Acquisition Methods

Please review the discussion of [antenna temperatures](#) provided by MSFC.

7.Observations

Data Notes

No additional notes at this time.

8.Data Granularity

Data are stored in daily files by orbit. The DMSP satellite completes just over 14 orbits each day. An orbit is defined as starting when the satellite crosses the equator going from south to north. Since (swath) data is stored by time, it's possible to have a fraction of an orbit before the first and last full orbits in a particular day's file. Missing data is flagged, such that any data falling on the previous or following days (before 00:00:00 or after 23:59:59 UTC of the current day) will not be present and the scan position will be filled with a

missing data flag.

9.Data Description

Spatial Characteristics

Spatial Coverage

Coverage is global; sea ice concentrations for ocean, ice and possible ice surfaces have been derived poleward of 35 degrees latitude.

Spatial Resolution

Temporal Characteristics

Temporal Coverage

Coverage is from 1 August 1987 through 30 November 1988.

Temporal Resolution

daily (24-hour coverage from 00:00:00 to 23:59:59 UTC).

Data Description

Please see the complete data description to the [NASA/NOAA SSM/I Pathfinder Sea Ice Concentration Data Sets](#).

Related Data Sets

- [DMSP SSM/I-SSMIS Daily Polar Gridded Brightness Temperatures](#)
- [Nimbus-7 SMMR Polar Radiances and Arctic and Antarctic Sea Ice Concentrations](#)

10.Data Manipulations

Formulae

Please review the [NASA Team algorithm](#).

11.Errors

Information to come.

12.Notes

Information to come.

13.Application of the Data Set

Information to come.

14.Data Set Plans

Information to come.

15. References

Cavalieri, D. J., J. Crawford, M. Drinkwater, W. J. Emery, D. T. Eppler, L. D. Farmer, M. Goodberlet, R. Jentz, A. Milman, C. Morris, R. Onstott, A. Schweiger, R. Shuchman, K. Steffen, C. T. Swift, C. Wackerman and R. L. Weaver. 1992. *NASA Sea ice Validation Program for the Defense Meteorological Satellite Program Special Sensor Microwave Imager: Final Report*. NASA Technical Memorandum 104559. National Aeronautics and Space Administration, Washington, D. C.

Wentz, Frank J. 1992. *Final Report Production of SSM/I Data Sets*. RSS Technical Report 090192. Remote Sensing Systems, Santa Rosa, CA.

16.Related Software

The HDF library and tools needed to view these data can be down loaded from the [National Center for Supercomputing Applications](#).

17.Data Access

NSIDC User Services
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fax: +1 303.492.2468
form: [Contact NSIDC User Services](#)
e-mail: nsidc@nsidc.org

18.Output Products and Availability

Data are available via FTP. Please [contact NSIDC User Services](#) to place an order, or for further information.

19. Glossary of Terms

No further information is available at this time.

20. List of Acronyms

No further information is available at this time.

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