



Summary:

The First ISCCP Regional Experiments have been designed to improve data products and cloud/radiation parameterizations used in general circulation models (GCMs). Specifically, the goals of FIRE are (1) to improve basic understanding of the interaction of physical processes in determining life cycles of cirrus and marine stratocumulus systems and the radiative properties of these clouds during their life cycles and (2) to investigate the interrelationships between the ISCCP data, GCM parameterizations, and higher space and time resolution cloud data.

To-date, four intensive field-observation periods were planned and executed: a cirrus IFO (October 13 - November 2, 1986); a marine stratocumulus IFO off the southwestern coast of California (June 29 - July 20, 1987); a second cirrus IFO in southeastern Kansas (November 13 - December 7, 1991); and a second marine stratocumulus IFO in the eastern North Atlantic Ocean (June 1 - June 28, 1992). Each mission combined coordinated satellite, airborne, and surface observations with modeling studies to investigate the cloud properties and physical processes of the cloud systems.

The Centre de Météorologie Spatiale (CMS) has produced nine data sets that are archived at the Langley Distributed Active Archive Center (DAAC). This document provides information on these nine data sets.

- FIRE_AX_CMS_CLOUD
- FIRE_AX_CMS_LWFLUX
- FIRE_AX_CMS_SOLAR_DY
- FIRE_AX_CMS_SOLAR_HR
- FIRE_AX_CMS_SOLAR_MN
- FIRE_AX_CMS_SOLAR_WK
- FIRE_AX_CMS_SST_DAY
- FIRE_AX_CMS_SST_FNTS
- FIRE_AX_CMS_SST_WEEK

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1. Data Set Overview:

Data Set Identification:



There are nine data sets available that can be obtained from the Langley DAAC:

FIRE_AX_CMS_CLOUD	First ISCCP Regional Experiment (FIRE) Atlantic Stratocumulus Transition Experiment (ASTEX) Centre de Meteorologie Spatiale (CMS) Cloud Classification Data (FIRE_AX_CMS_CLOUD)
FIRE_AX_CMS_LWFLUX	First ISCCP Regional Experiment (FIRE) Atlantic Stratocumulus Transition Experiment (ASTEX) Centre de Meteorologie Spatiale (CMS) Downward Longwave Flux Data (FIRE_AX_CMS_LWFLUX)
FIRE_AX_CMS_SOLAR_DY	First ISCCP Regional Experiment (FIRE) Atlantic Stratocumulus Transition Experiment (ASTEX) Centre de Meteorologie Spatiale (CMS) Daily Surface Solar Irradiance (FIRE_AX_CMS_SOLAR_DY)
FIRE_AX_CMS_SOLAR_HR	First ISCCP Regional Experiment (FIRE) Atlantic Stratocumulus Transition Experiment (ASTEX) Centre de Meteorologie Spatiale (CMS) Hourly Surface Solar Irradiance (FIRE_AX_CMS_SOLAR_HR)
FIRE_AX_CMS_SOLAR_MN	First ISCCP Regional Experiment (FIRE) Atlantic Stratocumulus Transition Experiment (ASTEX) Centre de Meteorologie Spatiale (CMS) Monthly Surface Solar Irradiance (FIRE_AX_CMS_SOLAR_MN)
FIRE_AX_CMS_SOLAR_WK	First ISCCP Regional Experiment (FIRE) Atlantic Stratocumulus Transition Experiment (ASTEX) Centre de Meteorologie Spatiale (CMS) Weekly Surface Solar Irradiance (FIRE_AX_CMS_SOLAR_WK)
FIRE_AX_CMS_SST_DAY	First ISCCP Regional Experiment (FIRE) Atlantic Stratocumulus Transition Experiment (ASTEX) Centre de Meteorologie Spatiale (CMS) Daily Sea Surface Temperature (FIRE_AX_CMS_SST_DAY)
FIRE_AX_CMS_SST_FNTS	First ISCCP Regional Experiment (FIRE) Atlantic Stratocumulus Transition Experiment (ASTEX) Centre de Meteorologie Spatiale (CMS) Sea Surface Temperature Front Intensity Data (FIRE_AX_CMS_SST_FNTS)
FIRE_AX_CMS_SST_WEEK	First ISCCP Regional Experiment (FIRE) Atlantic Stratocumulus Transition Experiment (ASTEX) Centre de Meteorologie Spatiale (CMS) Weekly Sea Surface Temperature Front Intensity Data (FIRE_AX_CMS_SST_WEEK)

Data Set Introduction:

See Summary above.

Objective/Purpose:

...

Summary of Parameters:

FIRE_AX_CMS_CLOUD: Clouds

Discussion:

FIRE_AX_CMS_CLOUD:

This product is based on observations by the geostationary METEOSAT and the AVHRR aboard the NOAA-11 and -12 polar orbiters.

These data are METEOSAT and NOAA observations to give cloud classification data. The file naming convention is:

cxDDMMYYsxx.fis_tmp



where DDMMYY is the date and xx = "slot number"

Mean time (UT) is obtained from the slot number over the ASTEX region by the formula:

$$UT = (xx/2) - 0.17$$

These files are: 11 pixels, 188 pixels/row, 163 rows. Each pixel has a spatial resolution of 0.08 degrees. For cloud classification, the rule is the following:

latitude = 39.99 - ((line-1)*0.08) longitude=-29.97+((point-1)*0.08)
(longitude west is >0).

This gives you the latitude and longitude of any pixel in the file.

The cloud type (1-15) is coded on the four Most Significant Bits. This code is:

1	-clear
2,3	-cloud edges
4	-thin cirrus
5,6	-thick cirrus
7	-perturbation
8,9,10	-low cumuliform
11,12	-low stratiform
13,14,15	-medium

Related Data Sets:

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2. Investigator(s):

Investigator(s) Name and Title:

FIRE_AX_CMS_CLOUD: Laurence Eymard

Title of Investigation:

First ISCCP Regional Experiment (FIRE)

Contact Information:

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3. Theory of Measurements:

...

4. Equipment:



Sensor/Instrument Description:

Collection Environment:

...

Source/Platform:

METEOSAT-4
METEOSAT-5

Source/Platform Mission Objectives:

...

Key Variables:

...

Principles of Operation:

...

Sensor/Instrument Measurement Geometry:

...

Manufacturer of Sensor/Instrument:

...

Sensor/Instrument:

Multispectral Imaging Radiometer (MIR)

Calibration:

Specifications:

...

Tolerance:

...

Frequency of Calibration:

...

Other Calibration Information:

...

5. Data Acquisition Methods:

...

6. Observations:

Data Notes:

...

Field Notes:

...

7. Data Description:



Spatial Characteristics:

Spatial Coverage:

These data are non-global data sets.

Spatial Coverage Map:

There are no maps for these data sets.

Spatial Resolution:

Data Set Name	Min Lat.	Max Lat.	Min Lon.	Max Lon.
FIRE_AX_CMS_CLOUD	27.03	39.99	-29.97	-15.01

Projection:

...

Grid Description:

...

Temporal Characteristics:

Temporal Coverage:

Data Set Name	Begin Date	End Date
FIRE_AX_CMS_CLOUD	05-29-1992	07-03-1992

Temporal Coverage Map:

There are no maps available for these data sets.

Temporal Resolution:

Data Set Name	Resolution
FIRE_AX_CMS_CLOUD	Each granule consists of one day of data.

Data Characteristics:

Parameter/Variable:

FIRE_AX_CMS_CLOUD: Clouds

Variable Description/Definition:

...

Unit of Measurement:

...



Data Source:

...

Data Range:

...

Sample Data Record:

FIRE_AX_CMS_CLOUD

The files are in binary format and cannot be viewed in this document.

8. Data Organization:

Data Granularity:

A general description of data granularity as it applies to the IMS appears in the [EOSDIS Glossary](#). There are no terms.

Data Format:

The data are in binary format.

9. Data Manipulations:

Formulae:

Derivation Techniques and Algorithms:

...

Data Processing Sequence:

Processing Steps:

...

Processing Changes:

...

Calculations:

Special Corrections/Adjustments:

...

Calculated Variables:

...

Graphs and Plots:

There are no graphs or plots available for these browse images.

10. Errors:

Sources of Error:

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Quality Assessment:



Data Validation by Source:

...

Confidence Level/Accuracy Judgement:

...

Measurement Error for Parameters:

...

Additional Quality Assessments:

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Data Verification by Data Center:

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11. Notes:**Limitations of the Data:**

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Known Problems with the Data:

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Usage Guidance:

...

Any Other Relevant Information about the Study:

...

12. Application of the Data Set:

...

13. Future Modifications and Plans:

There are no plans for future modifications of these data sets.

14. Software:**Software Description:**

There are sample read software available for these data sets. The codes are written in C. A makefile and readme file are also available. These files allow the users to compile and work with the data easily.

Software Access:

The software can be obtained through the Langley DAAC. Please refer to the contact information below. The software can also be obtained at the same time the user is ordering these data sets.

15. Data Access:**Contact Information:**

Langley DAAC User and Data Services Office
NASA Langley Research Center
Mail Stop 157D
Hampton, Virginia 23681-2199
USA



Telephone: (757) 864-8656
FAX: (757) 864-8807
E-mail: support-asdc@earthdata.nasa.gov

Data Center Identification:

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Hampton, Virginia 23681-2199
USA
Telephone: (757) 864-8656
FAX: (757) 864-8807
E-mail: support-asdc@earthdata.nasa.gov
URL: <http://eosweb.larc.nasa.gov>

Procedures for Obtaining Data:

The Langley DAAC Information Management System (IMS) is an on-line system that features a graphical user interface (GUI) that allows to query the Langley DAAC data set holdings, to view pre-generated browse products, and to order specific data products. Users may also request data by letter, telephone, electronic mail (INTERNET), or personal visit.

The Langley DAAC User and Data Services (SUDS) staff provides technical and operational support for users ordering data. The Langley DAAC Handbook is available in a postscript file through the IMS for users who want detailed information about the Langley DAAC holdings. Users may also obtain a copy by contacting:

Langley DAAC User and Data Services Office
NASA Langley Research Center
Mail Stop 157D
Hampton, Virginia 23681-2199
USA
Telephone: (757) 864-8656
FAX: (757) 864-8807
E-mail: support-asdc@earthdata.nasa.gov
URL: <http://eosweb.larc.nasa.gov>

Data Center Status/Plans:

The Langley DAAC will continue to archive this data. There are no plans to reprocess.

16. Output Products and Availability:

There are no output products available at this time.

17. References:

Not available at this time.

18. Glossary of Terms:

[EOSDIS Glossary.](#)

19. List of Acronyms:

NASA - National Aeronautics Space Administration
URL - Uniform Resource Locator

[EOSDIS Acronyms.](#)

20. Document Information:

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October 07, 1996

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Citation:

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Document Curator:

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