First ISCCP Regional Experiment (FIRE) Atlantic Stratocumulus Transition Experiment (ASTEX) Surface Langley DAAC Data Set Document

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 seek the 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.

This document discusses the following data sets.

- FIRE_AX_SFC_IMAU
- FIRE_AX_SFC_FUNCHAL

Table of Contents:

1. Data Set Overview:

Data Set Identification:

FIRE_AX_SFC_FUNCHAL

Research (IMAU) Santa Maria Surface Data (FIRE_AX_SFC_IMAU)
First ISCCP Regional Experiment (FIRE) Atlantic Stratocumulus Transition Experiment (ASTEX) Instituto Nacional de Meteorologia Geofisica (INMG) Funchal Sounding Data (FIRE_AX_SFC_FUNCHAL)

Data Set Introduction:

FIRE_AX_SFC_IMAU
These data were collected by the University of Utrecht (The Netherlands) during ASTEX experimental campaign, June 1992, at the surface site of Santa Maria (36.99 N; 25.17W; ASL=50M).

FIRE_AX_SFC_FUNCHAL
This data set contains sounding measurements taken in Funchal, Madeiras during June, 1987-1992. Six files contain 00Z data and five files contain 12Z data.

Objective/Purpose:

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Summary of Parameters:

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Discussion:

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Related Data Sets:

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2. Investigator(s):

Investigator(s) Name and Title:

...

Title of Investigation:

First ISCCP Regional Experiment (FIRE)

Contact Information:

FIRE_AX_SFC_IMAU
Peter G. Duynkereke
Institute of Marine and Atmospheric Research (IMAU)
Utrecht University
Princetonplein 5
THE NETHERLANDS
Phone: (31 30) 533271
FAX: (31 30) 543163
Email: nvila@fys.ruu.nl

FIRE_AX_SFC_FUNCHAL
Jorge Simoes Cristina
Instituto Nacional de Meteorologia e Geofisica
Rua C - Aeroporto
1700 Lisboa
PORTUGAL
Phone: (351 1) 848 39 61
FAX: (351 1) 80 23 70

Email: unknown

3. Theory of Measurements:

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4. Equipment:

Sensor/Instrument Description:

Collection Environment:

...

Source/Platform:

GROUND STATION

Source/Platform Mission Objectives:

...

Key Variables:

FIRE_AX_SFC_IMAU	Humidity Irradiance Temperature Wind Direction Wind Speed
FIRE_AX_SFC_FUNCHAL	Geopotential Height Humidity Pressure Temperature Wind Direction Wind Speed

Principles of Operation:

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Sensor/Instrument Measurement Geometry:

...

Manufacturer of Sensor/Instrument:

...

Sensor/Instrument:

FIRE_AX_SFC_IMAU	HUMIDITY SENSOR PYRANOMETER TEMPERATURE SENSOR WIND SENSOR
FIRE_AX_SFC_FUNCHAL	RADIOSONDE

Calibration:

Specifications:

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Tolerance:

...

Frequency of Calibration:

...

Other Calibration Information:

...

5. Data Acquisition Methods:

...

6. Observations:

Data Notes:

...

Field Notes:

...

7. Data Description:

Spatial Characteristics:

Spatial Coverage:

Data Set	Min Lat	Max Lat	Min Lon	Max Lon
FIRE_AX_SFC_IMAU	32.66	32.66	-16.92	-16.92
FIRE_AX_SFC_FUNCHAL	36.99	36.99	-25.17	-25.17

Spatial Coverage Map:

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Spatial Resolution:

...

Projection:

...

Grid Description:

...

Temporal Characteristics:

Temporal Coverage:

Data Set	Begin Date	End Date

FIRE_AX_SFC_IMAU	06-01-1992	06-28-1992
FIRE_AX_SFC_FUNCHAL	06-01-1986	06-30-1992

Temporal Coverage Map:

There are no maps available for these data sets.

Temporal Resolution:

...

Data Characteristics:

Parameter/Variable:

FIRE_AX_SFC_IMAU
Every file contains the following variables:

-time (UTC):	Universal Time Coordinated time. Data were taken every 2 minutes.
-T6(C):	Temperature at 6 meters. Accuracy of the temperature sensor 0.2 C
-T2(C):	Temperature at 2 meters. Accuracy of the temperature sensor 0.2 C
-rh6():	Relative humidity at 6 meters. Accuracy of the relative humidity sensor 2 Above 90 the measurements are less accurate. Highest value measured by the sensor: 95
-rh2():	Relative humidity at 2 meters. Accuracy of the relative humidity sensor 2 Above 90 the measurements lose accuracy. Highest value measured by the sensor: 99
-ff6(m/s)	Wind speed at 6 meters. Accuracy of the sensor 0.2 m/s.
-dd(deg)	Wind direction at 6 meters. Accuracy of the sensor 4 deg.
-fsin(W/m2)	Incoming shortwave radiation at 1.5 meters. Pyranometer measures the irradiance between 305 to 2800 nm with a precision 2 W/m2.
-fsou(W/m2)	Outcoming shortwave radiation at 1.5 meters. Pyranometer measures the irradiance between 305 to 2800 nm with a precision 2 W/m2.

FIRE_AX_SFC_FUNCHAL

Variable Description/Definition:

See Parameter/Variable Section above.

Unit of Measurement:

See Parameter/Variable Section above.

Data Source:

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Data Range:

...

Sample Data Record:

...

8. Data Organization:

Data Granularity:

A general description of data granularity as it applies to the IMS appears in the EOSDIS Glossary.

Data Format:

The data are in native binary format.

9. Data Manipulations:

Formulae:

Derivation Techniques and Algorithms:

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Data Processing Sequence:

Processing Steps:

...

Processing Changes:

...

Calculations:

Special Corrections/Adjustments:

...

Calculated Variables:

...

Graphs and Plots:

...

10. Errors:

Sources of Error:

...

Quality Assessment:

Data Validation by Source:

...

Confidence Level/Accuracy Judgement:

...

Measurement Error for Parameters:

...

Additional Quality Assessments:

...

Data Verification by Data Center:

...

11. Notes:

Limitations of the Data:

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Known Problems with the Data:

...

Usage Guidance:

...

Any Other Relevant Information about the Study:

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12. Application of the Data Set:

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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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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 (UDS) 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:

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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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Langley DAAC User and Data Services Office
Telephone: (757) 864-8656
FAX: (757) 864-8807
E-mail: support-asdc@earthdata.nasa.gov