First ISCCP Regional Experiment (FIRE) Cirrus 2 National Oceanic and Atmospheric Administration (NOAA) Carbon Dioxide (CO2) Doppler LIDAR (FIRE_CI2_DOPLR_LIDAR) 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 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 system.

This data set document provides information for the data set, FIRE_CI2_DOPLR_LIDAR.

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1. Data Set Overview:

Data Set Identification:

FIRE_CI2_DOPLR_LIDAR:

First ISCCP Regional Experiment (FIRE) Cirrus 2 NOAA Carbon Dioxide (CO2) Doppler Lidar (FIRE_CI2_DOPLR_LIDAR)

Data Set Introduction:

The Doppler lidar data set includes wind profiles derived by the VAD method for the FIRE-2 top 5 priority days (21,25,28,30 of Nov. 1991, and Dec. 5, 1991). Vertical profiles of the horizontal wind speed and direction were acquired by the lidar using a classical method commonly referred to as the VAD technique, where VAD stands for Velocity Azimuth Display.

The Doppler lidar experiment objective was to obtain lidar measurements of relative backscatter signal intensity and radial velocity from cirrus clouds to study their microphysical and radiative properties. This data set provides vertical profiles (approx. 1.5 - 20.0 km agl).

Objective/Purpose:

...

Summary of Parameters:

Ground Height
Wind Direction
Wind Speed

Discussion:

...

Related Data Sets:

...

2. Investigator(s):

Investigator(s) Name and Title:

...

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:

GROUND STATION

Source/Platform Mission Objectives:

...

Key Variables:

Ground Height
Wind Direction
Wind Speed

Principles of Operation:

...

Sensor/Instrument Measurement Geometry:

...

Manufacturer of Sensor/Instrument:

...

Sensor/Instrument:

LIDAR

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:

Data Set Name	Min Lat	Max Lat	Min Lon	Max Lon
FIRE_CI2_DOPLR_LIDAR	37.06	37.06	-95.34	-95.34

Spatial Coverage Map:

There are no maps available for this data set.

Spatial Resolution:

...

Projection:

...

Grid Description:

...

Temporal Characteristics:

Temporal Coverage:

Data Set Name	Begin Date	End Date
FIRE_CI2_DOPLR_LIDAR	11-13-1991	12-07-1991

Temporal Coverage Map:

There are no maps available for this data set.

Temporal Resolution:

This data set comprises six ASCII files in tabular format. Five of them are named "fire2vadDDMMMa", where DD is the day of month, MMM the month (either nov or dec), and "a" indicating ASCII file. The sixth file is named "fire2vad91a", which contains the entire year 1991's data. Each ASCII file is derived from two corresponding binary files, i.e., directory and data files. Thus, an ASCII file contains the directory of all profiles in this file and the profiles data. Each profile starts with one directory line, followed by two header lines, followed by multiple profile records.

Data Characteristics:

Parameter/Variable:

There are 12 variables in the directory section, and nine variables in a profile record. The Fortran format for the directory variables is: (I5, 2I8,3(F8.2),4I4,2I6), and format for the profile variables is: (7(F9.3), I4,x,F9.3). The variable values in the directory line should be the same as the corresponding line defined in the directory of profiles section. The variables for the directory and the profile record are listed in order below.

Variable Name (for directory)

- profile number
- date
- time
- elevation angle
- begin azimuth

Variable Name (for profile record)

- altitude (km above ground level)
- wind speed (m/s)
- wind direction (degrees)
- signal to noise ratio
- percent of good points ()

- end azimuth
- sweep number
- sweep direction
- quality flag
- site number
- begin record number in data file
- end record number in data file
- rms error
- vertical velocity divergence (m/s)
- quality of each data value
- energy at each altitude

Variable Description/Definition:

...

Unit of Measurement:

...

Data Source:

...

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 ASCII 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 images available for this data set.

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:

...

Known Problems with the Data:

...

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:

Sample read software is available for this data set.

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
URL: http://eosweb.larc.nasa.gov

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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:

There are no references 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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