

First ISCCP Regional Experiment (FIRE) Cirrus 2 Raman 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 document provides information for the FIRE_CI2_RAMAN_LIDAR data set.

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1. Data Set Overview:

Data Set Identification:

FIRE_CI2_RAMAN_LIDAR:

First ISCCP Regional Experiment (FIRE) Cirrus 2 Raman Lidar Data
(FIRE_CI2_RAMAN_LIDAR)

Data Set Introduction:



The GSFC Raman Lidar water vapor mixing ratio (wvwr) data with altitudes and times were collected for the period from 13 Nov 1991 to 07 Dec 1991. Data were collected at night and consists of a series of one minute profiles. Data are summed for one minute in the detectors and saved to a file. For the 10 minute averaged data, the data are summed for 10 minutes before the calculations are performed. Each profile has a 75 meter resolution from 0.4135 to 10.299 kilometers. Zero (0) km means sea level. The site altitude is 0.229 km and the first data point is at 0.1845 km above ground level.

Objective/Purpose:

...

Summary of Parameters:

Mixing Ratio

Discussion:

...

Related Data Sets:

...

2. Investigator(s):

Investigator(s) Name and Title:

...

Title of Investigation:

First ISCCP Regional Experiment (FIRE) Cirrus

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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:



Mixing Ratio

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_RAMAN_LIDAR	37.10	37.10	-95.35	-95.35

Spatial Coverage Map:

...



Spatial Resolution:

...

Projection:

...

Grid Description:

...

Temporal Characteristics:**Temporal Coverage:**

Data Set Name	Begin Date	End Date
FIRE_CI2_RAMAN_LID AR	11-13-1991	12-07-1991

Temporal Coverage Map:

...

Temporal Resolution:

...

Data Characteristics:**Parameter/Variable:**

There are six variables in the data. These variables with units and estimated precision (in units) are listed in order below.

Variable Name	Precision	Min	Max
num of profiles	1	1	710
time of profile (ut-seconds)	60	0	86400
number of heights (lines)	1	1	131
height - altitude (meters)	75	10	75
water vapor mix ratio (g/kg)	0	0	20
water vapor mix ratio error (g/kg)	0	0	1

Variable Description/Definition:

See above.

Unit of Measurement:

See above.

Data Source:

...



Data Range:

See above.

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](#).

Raman Lidar data set consists of 28 ASCII files. Each is named ci2_wvYYMMDD_Xm, where YY is the year, MM the month, and DD the day when the data were collected. X in the file name can only be either 1 or 10, indicating the 1 minute summed data or 10 minutes averaged data. Each file starts with two header lines. The first header line contains the beginning and ending time, which have the format of YYYYMMDDhhmmss, where YY is the year, MM the month, DD the day, hh the hour, mm the minute, and ss the second of data observed in this file. The second header line contains the description of viewing geometry in file and the range of the water vapor mix ratio.

The next line is the "number of profiles" value, which can occur only once in each file. The "time of profile" and the "number of heights" follow immediately. If there are X "number of heights", there will be X occurrences of the "height", "water vapor mix ratio", and "water vapor mix ratio error" lines following it. Then, the next "time of profile" follows. This repeats over the "number of profiles" times. Data with values of 0 (zero) are missing data.

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:

Image files are not 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 to modify 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 this data set.

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>

Data Center Identification:

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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 dataset 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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