CERES Data Management

Presented to
CERES-II Science Team

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Agenda

State of Data Products

Data Management Issues Impacting CERES

Discussion

Current Issues In
CERES Data Management

- Cost reduction measures
  - Improve production efficiency of analysis products
    - Increase automation
    - Take advantage of any computation resources available
      - Perform special studies and test adjustments
      - GSFC, ARC supercomputers, CERES SCF, LaTIS,
    - Access to large sets of input/output data remotely
  - Code Conversion
    - Run codes at different locations and/or different platforms
      - Yield scientifically comparable results
    - Certification of codes for a platform type and operating system
- Implement NASA and LaRC Management Policies
  - Increased computer security
  - Increase software engineering constraints on code development

Science Data Product URLs and Contacts

- Ordering Data
  - http://eosweb.larc.nasa.gov/HBDOCS/langley_web_tool.html
  - Can also order data from EOS Data Gateway
- Subsets of SSF, CRS, and ES8 are available
  - Order data using Java version of Langley Ordering Tool
  - Can subset by parameters or latitude/longitude box
- Contact Points
  - All questions regarding production data products and their use
    - E-mail: larc@eos.nasa.gov
    - Langley ASDC Customer Service
  - Contents of this presentation: michael.m.little@nasa.gov
- CERES News (e-mail)
  - Subscribe from CERES datasets webpage
  - All new public datasets are announced as soon as available
  - Mechanism for distributing important CERES information

CERES Science Data Sets
New Since November 2004

Data Set	Comments
CER_SFC_Terra-FMx-MODIS_Edition2C	• Edition2B SSF are input • 3/00 – 12/03 processed; 1/04 - 10/04 to process shortly • Publicly available
CER_FSW_Terra-FMx-MODIS_Edition2C	• Edition2B CRS are input (Crosstrack data only) • 3/00 –3/03 processing • Not yet publicly available
CER_SSF_Aqua-FMx-MODIS_Edition1B	• 6/18/02 – 6/30/04 processed • 7/1/04 – 9/30/04 to process when inputs become available • Publicly available
CER_SFC_Aqua-FMx-MODIS_Edition1B	• Edition1B SSF are inputs • 7/02 – 5/04 processing • Publicly available
CER_CRS_Aqua-FMx-MODIS_Beta1 CER_FSW_Aqua-FMx-MODIS_Beta1	• First SARB data sets for Aqua • Edition1B SSF is input • 7/02 – 3/03 processing (No MATCH after 3/03) • Not yet publicly available

CERES Science Data Sets
Expected Before Next Science Team Meeting

Data Set	Comments	When?
CER_SRBAVG_Terra-FMx-MODIS_Edition2D	• Edition2C SFC are input • 3 years of data to be processed (3/00 – 2/03)	No target date at this time
CER_SRBAVG_Aqua-FMx-MODIS_Edition1B	• Edition1B SFC are input • Initially process 7/02 – 2/03	To start after Terra Edition2D completes
CER_SYN_Terra-FMx-MODIS_Beta3 CER_AVG_Terra-FMx-MODIS_Beta CER_ZAVG_Terra-FMx-MODIS_Beta3	• Edition2C FSW are input • 1 year of data to be processed	No target date at this time
CER_SYN_TRMM-PFM-VIRS_Beta4 CER_AVG_TRMM-PFM-VIRS_Beta4 CER_ZAVG_TRMM-PFM-VIRS_Beta4	• Edition2C FSW are input • 8 months of data to be processed • First set of TRMM SYN/AVG/ZAVG files	No target date at this time
CER_SSF_Aqua-FMx-MODIS_Edition2A CER_SFC_Aqua-FMx-MODIS_Edition2A	• Final Aqua ADMs • Process all month for which inputs available	October or November 2005

Older CERES Science Data Sets
Still of Interest (TRMM)

Data Set	Comments
CER_BDS_TRMM-PFM_Edition1 CER_ES8_TRMM-PFM_Edition2 CER_ES4_TRMM-PFM_Edition2 CER_ES9_TRMM-PFM_Edition2 CER_SSF_TRMM-PFM-VIRS_Edition2B CER_SFC_TRMM-PFM-VIRS_Edition2B CER_SRBAVG_TRMM-PFM-VIRS_Edition2B CER_CRS_ TRMM-PFM-VIRS_Edition2C CER_FSW_ TRMM-PFM-VIRS_Edition2C	• TRMM period Jan'98 – Aug'98; Mar'00 • Publicly available
CER_BDS_TRMM-PFM_Transient-Ops2 CER_ES8_TRMM-PFM_Transient-Ops2 CER_SSF_TRMM-PFM-VIRS_Edition2B-TransOps	• Transient Operations period Jan'99 – Jul'99 • BDS not publicly released; others publicly available
CER_ES4_PFM+FM1+FM2_Edition2 CER_ES9_PFM+FM1+FM2_Edition2 CER_ES4_PFM+FM1_Edition2 CER_ES9_PFM+FM1_Edition2 CER_ES4_PFM+FM2_Edition2 CER_ES9_PFM+FM2_Edition2	• Mar'00 only month of TRMM, Terra overlap • Publicly available
CER_SSF_TRMM-SIM-VIRS_Edition2-VIRSonly	• Processed only for months when CERES was off • Currently processed through Jul'01 • Publicly available

Older CERES Science Data Sets
Still of Interest (Terra)

Data Set	Comments
CER_BDS_Terra-FMx_Edition2 CER_ES8_Terra-FMx_Edition2 CER_ES4_Terra-FMx_Edition2 CER_ES9_Terra-FMx_Edition2	• Instrument drifts removed • Terra Edition2 BDS and ES8 processed 2/25/00 – 11/30/04 • Terra Edition2 ES4 and ES9 processed 3/00 – 10/04 • Publicly available • Edition1 through 3/31/05 also publicly available
CER_ES4_FM1+FM2_Edition2 CER_ES9_FM1+FM2_Edition2	• Processed Mar'00 through Dec'02 • Production of these data sets halted • Replaced by Terra/Aqua combined Crosstrack data sets (FM1+FM3, FM1+FM4 Edition2) • Publicly available
CER_SSF_ Terra-FMx_Edition2B	• 2/25/00 – 6/30/04 processed; 7/1/04 - 11/30/04 processing • Uses Edition2 instrument data as input • Edition2 Clouds; Final Terra ADMs • Publicly available
CER_CRS_ Terra-FMx_Edition2B	• Edition2B SSF input; latest version of SARB algorithms • Processed 3/1/00 – 3/31/03 Crosstrack data (no MATCH after 3/03) • Uses Terra Edition2B SSF as input • Not publicly available

Older CERES Science Data Sets
Still of Interest (Aqua)

Data Set	Comments
CER_BDS_Aqua-FMx_Edition2 CER_ES8_Aqua-FMx_Edition2 CER_ES4_Aqua-FMx_Edition2 CER_ES9_Aqua-FMx_Edition2	• Instrument drifts removed • Aqua Edition2 BDS and ES8 processed 6/18/02 – 7/31/04 • Aqua Edition2 ES4 and ES9 processed 7/02 – 7/04 • Publicly available • Edition1 FM3 through 3/31/05 also publicly available • Edition1 FM4 through 3/29/05 also publicly available; 3/30/05 processing halted
CER_ES4_FM1+FM3_Edition2 CER_ES4_FM1+FM4_Edition2 CER_ES9_FM1+FM3_Edition2 CER_ES9_FM1+FM4_Edition2	• Combine only Crosstrack instruments • Jul'02 – Jul'04 currently available • Uses Terra Edition2 and Aqua Edition2 inputs • Publicly available

Documentation Overview

- Data Quality Summaries
  - Detailed information about a particular data set
  - Always consult Quality Summary prior to using data or publishing research
  - Revisions to be applied to Data Set in advance of a new Edition
- Data Products Catalog
  - Parameter lists for each data product
  - Version of pages that apply to data set included with order
- Collection Guides
  - User Guide for data product
- Description/Abstract
  - Record of differences between data sets and configuration codes

Questions about Data Sets

- Look over Data Products Catalog pages
- Reread Data Quality Summary
- Consult Collection Guide, if available
- Specific science questions may be sent to Contact Scientist listed in Section 2.2 of Collection Guide or in Description/Abstract
- All other questions should be sent to User Services
    larc@eos.nasa.gov
- For data products for which no Collection Guide or Description/Abstract is available, send all questions to User Services

Discussion of Improvements

- Data Formats and Delivery for Modeling Use?
  - Access vs. delivery
  - High performance networks to modeling centers
- Integration of measurements into ESMF
  - Extent of use of ESMF
  - Assimilated Data vs. Observed Data Products