AVAC-S — A tool for validating aerosols and cloud properties from SEVIRI

Sauli Joro, EUMETSAT

NWC SAF 2010 Users' Workshop

26-28 April 2010, Madrid, Spain

AVAC–S

The A-Train

- A-Train Validation of Aerosol and Cloud properties from SEVIRI

- A EUMETSAT Meteorological Division project to procure a software to validate Optimal Cloud Analysis (OCA) product

- Programmed in IDL, using Object Oriented Programming (OOP)

- A-train validation data includes: CPR, CALIOP, AMSR-E, MODIS (+ECMWF profiles)

- Upcoming version of AVAC–S has a common data ingestion routine — *any* product in SEVIRI grid can be imported to AVAC–S,

EUMETSAT
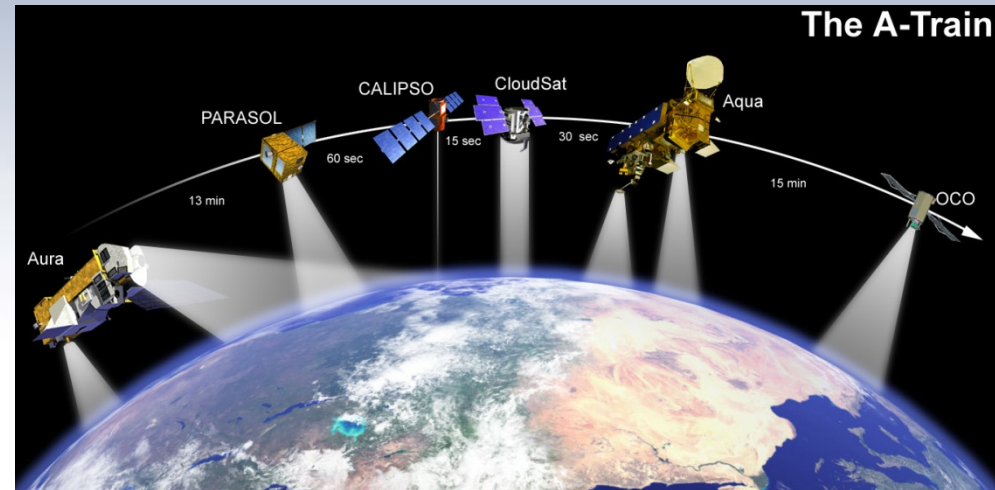
Validation and analysis data

MODIS
Moderate Resolution Imaging Spectroradiometer

Cloud Mask

Cloud Top Pressure

Cloud Top Temperature

Cloud Particle Phase

Cloud Fraction

Cloud Optical Thickness

Cloud Particle Size

Cloud Water Path

CALIOP
Cloud-Aerosol Lidar with Orthogonal Polarisation

Lidar Reflectivity at 532 nm

Lidar Reflectivity at 1064 nm

Cloud Top Altitude

Cloud Base Altitude

Cloud Phase

AMSR-E
Advanced Microwave Scanning Radiometer

Water Vapour Path

Cloud Liquid Water Path

Sea Surface Temperature

Near Surface Wind Speed

ECMWF
European Centre for Medium-Range Weather Forecasts

Temperature profile

Ozone profile

Water vapor profile
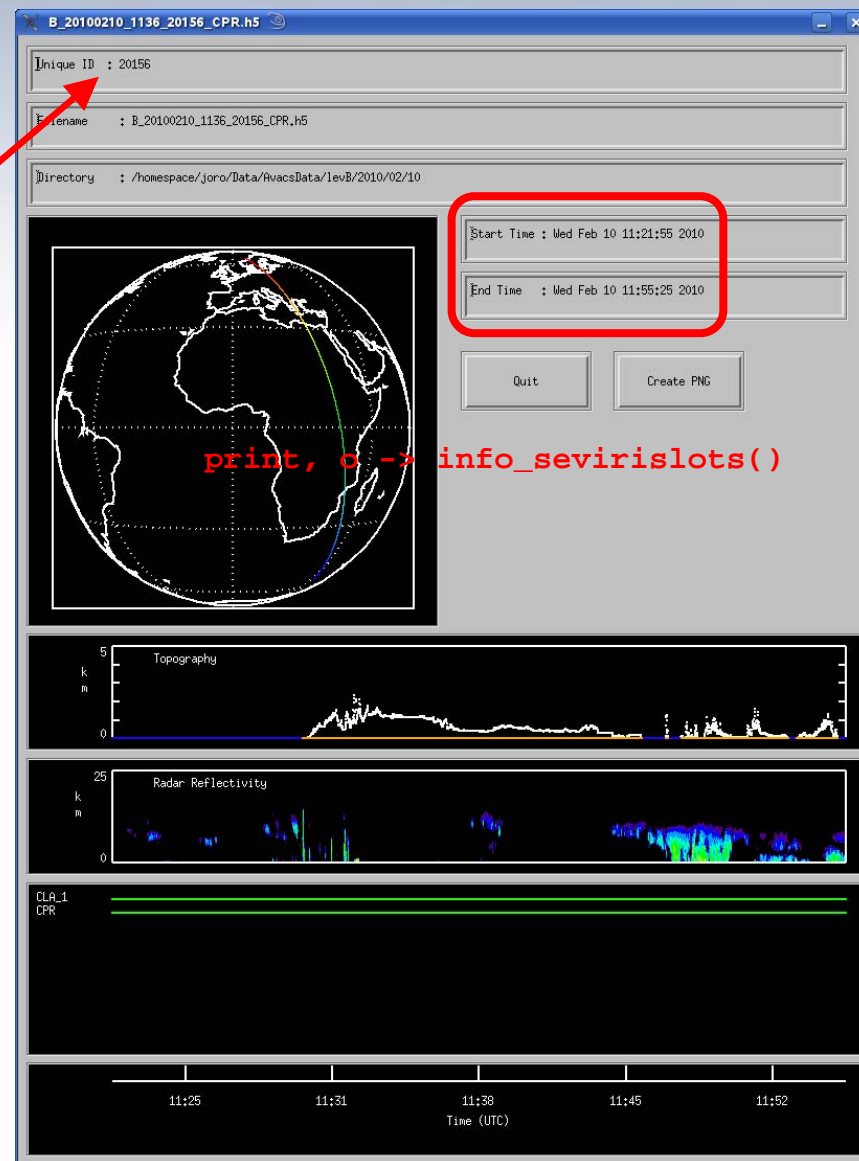
Pressure profile

Auxiliary information

CPR
Cloud Profiling Radar

Cloud Height

Radar Reflectivity

Cloud Scenario

Core functionality

- Maps product data together with selected A-Train data on a common grid

- Data identification based on <u>CloudSat</u> orbit numbers

- Combined data sets, "Level-B data files", stored as HDF5-files

- Offers a *quicklook* - tool to explore the created Level-B data set

```
atrain_startup
o = obj_new('atrain')
o -> set_overpass, 20156
o -> quicklook
```

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http://www.cloudsat.cira.colostate.edu/index.php

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CLOUDSAT MISSION
CloudSat Outreach
CIRA
Colorado State University

Welcome to the CloudSat Data Processing Center

CloudSat is a satellite mission designed to measure the vertical structure of clouds from space. The spacecraft will produce detailed images of cloud structures which will contribute to a better understanding of clouds and climate.

We encourage you to find out more about the CloudSat mission and the Data Processing Center by perusing this website. However, some of the data and features on this site are available only to CloudSat project team members.

Visit the **main CloudSat project website** at Colorado State University.

R04 Available to the General Science Community

Release 4 is now available to the General Science Community via the **data ordering system**. This release includes the 1B-CPR, 2B-GEOPROF, 2B-GEOPROF-LIDAR, ECMWF-AUX, MODIS-AUX, and 2B-CLDCLASS products. Please see the **annoucement** for more information.

DPC News

2/8 - CloudSat Data Released

1/18 - CloudSat CPR back to operate mode

12/30 - CloudSat Battery Anomaly Update

More news...   XML

Partners

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Quicklook Images

Important Info. for First Time Users | Example Image | FAQ   Ops Team

earlier ›

Granule	Start Date (UTC)	Granule	Start Date (UTC)	Granule	Start Date (UTC)	Granule	Start Date (UTC)
21202 FL	04/23/2010 06:39	21177	04/21/2010 13:27	21152	04/19/2010 20:15	21127	04/18/2010 03:03
21201 FL	04/23/2010 05:00	21176	04/21/2010 11:48	21151	04/19/2010 18:36	21126	04/18/2010 01:24
21200 FL	04/23/2010 03:21	21175	04/21/2010 10:09	21150	04/19/2010 16:57	21125	04/17/2010 23:45
21199 FL	04/23/2010 01:42	21174	04/21/2010 08:30	21149	04/19/2010 15:18	21124	04/17/2010 22:06
21198 FL	04/23/2010 00:04	21173	04/21/2010 06:52	21148	04/19/2010 13:39	21123	04/17/2010 20:27
21197 FL	04/22/2010 22:25	21172	04/21/2010 05:13	21147	04/19/2010 12:01	21122	04/17/2010 18:49
21196 FL	04/22/2010 20:46	21171	04/21/2010 03:34	21146	04/19/2010 10:22	21121	04/17/2010 17:10
21195 FL	04/22/2010 19:07	21170	04/21/2010 01:55	21145	04/19/2010 08:43	21120	04/17/2010 15:31
21194 FL	04/22/2010 17:28	21169	04/21/2010 00:16	21144	04/19/2010 07:04	21119	04/17/2010 13:52
21193 FL	04/22/2010 15:49	21168	04/20/2010 22:37	21143	04/19/2010 05:25	21118	04/17/2010 12:13
21192 FL	04/22/2010 14:10	21167	04/20/2010 20:58	21142	04/19/2010 03:46	21117	04/17/2010 10:34
21191 FL	04/22/2010 12:31	21166	04/20/2010 19:19	21141	04/19/2010 02:07	21116	04/17/2010 08:55
21190 FL	04/22/2010 10:53	21165	04/20/2010 17:40	21140	04/19/2010 00:28	21115	04/17/2010 07:16
21189 FL	04/22/2010 09:14	21164	04/20/2010 16:02	21139	04/18/2010 22:50	21114	04/17/2010 05:37
21188 FL	04/22/2010 07:35	21163	04/20/2010 14:23	21138	04/18/2010 21:11	21113	04/17/2010 03:59
21187 FL	04/22/2010 05:56	21162	04/20/2010 12:44	21137	04/18/2010 19:32	21112	04/17/2010 02:20
21186 FL	04/22/2010 04:17	21161	04/20/2010 11:05	21136	04/18/2010 17:53	21111	04/17/2010 00:41
21185 FL	04/22/2010 02:38	21160	04/20/2010 09:26	21135	04/18/2010 16:14	21110	04/16/2010 23:02
21184 FL	04/22/2010 00:59	21159	04/20/2010 07:47	21134	04/18/2010 14:35	21109	04/16/2010 21:23
21183 FL	04/21/2010 23:20	21158	04/20/2010 06:08	21133	04/18/2010 12:56	21108	04/16/2010 19:44
21182	04/21/2010 21:41	21157	04/20/2010 04:29	21132	04/18/2010 11:17	21107	04/16/2010 18:05
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21180	04/21/2010 18:24	21155	04/20/2010 01:12	21130	04/18/2010 08:00	21105	04/16/2010 14:48
21179	04/21/2010 16:45	21154	04/19/2010 23:33	21129	04/18/2010 06:21	21104	04/16/2010 13:09
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earlier ›
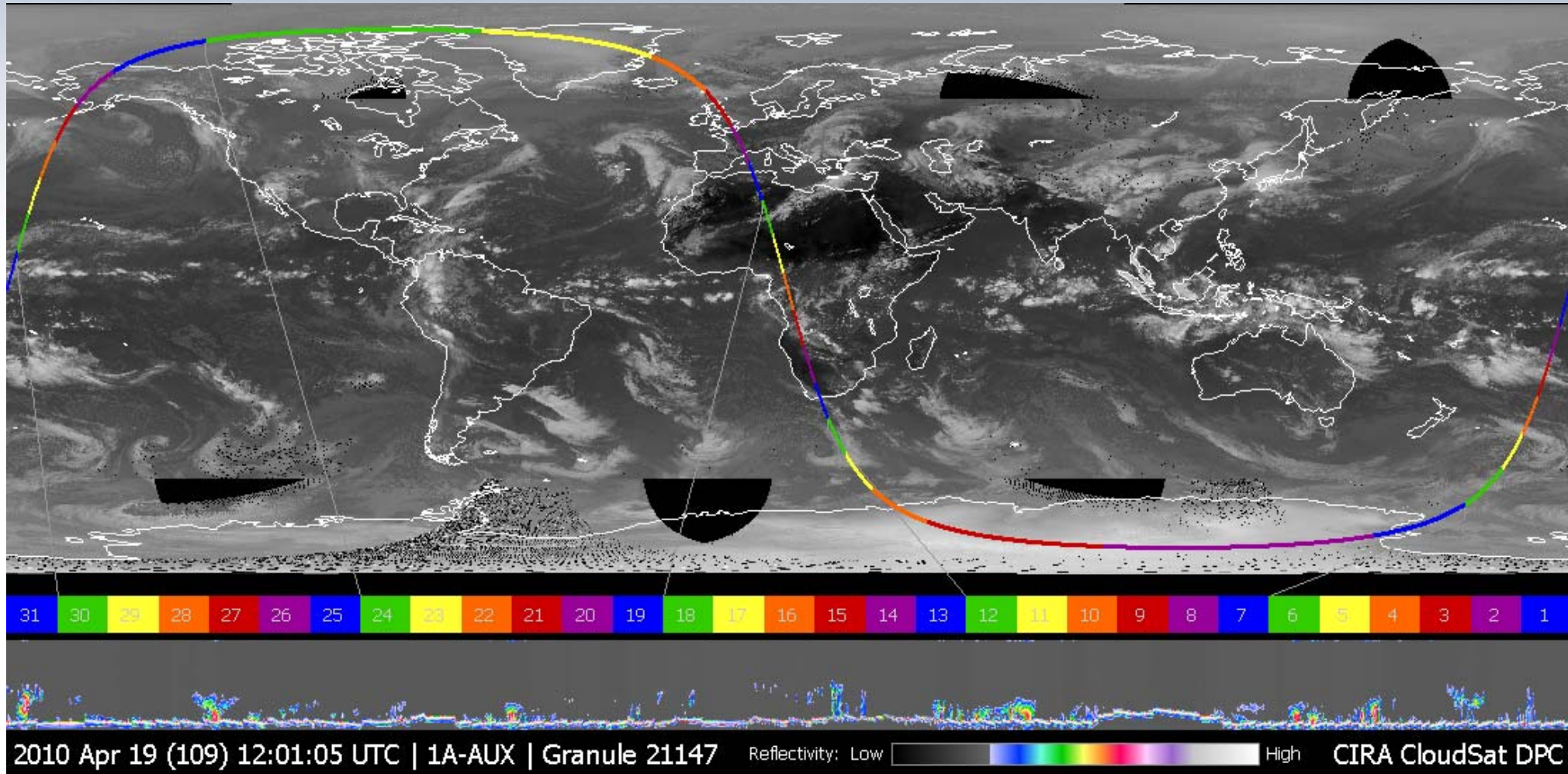
page 211 * 21202 04/23/2010 06:39

■ = Calibration maneuver in this granule (transmitter may be off for part of granule and/or contain missing frames)
■ = Transmitter was off for part of granule (may also contain missing frames)
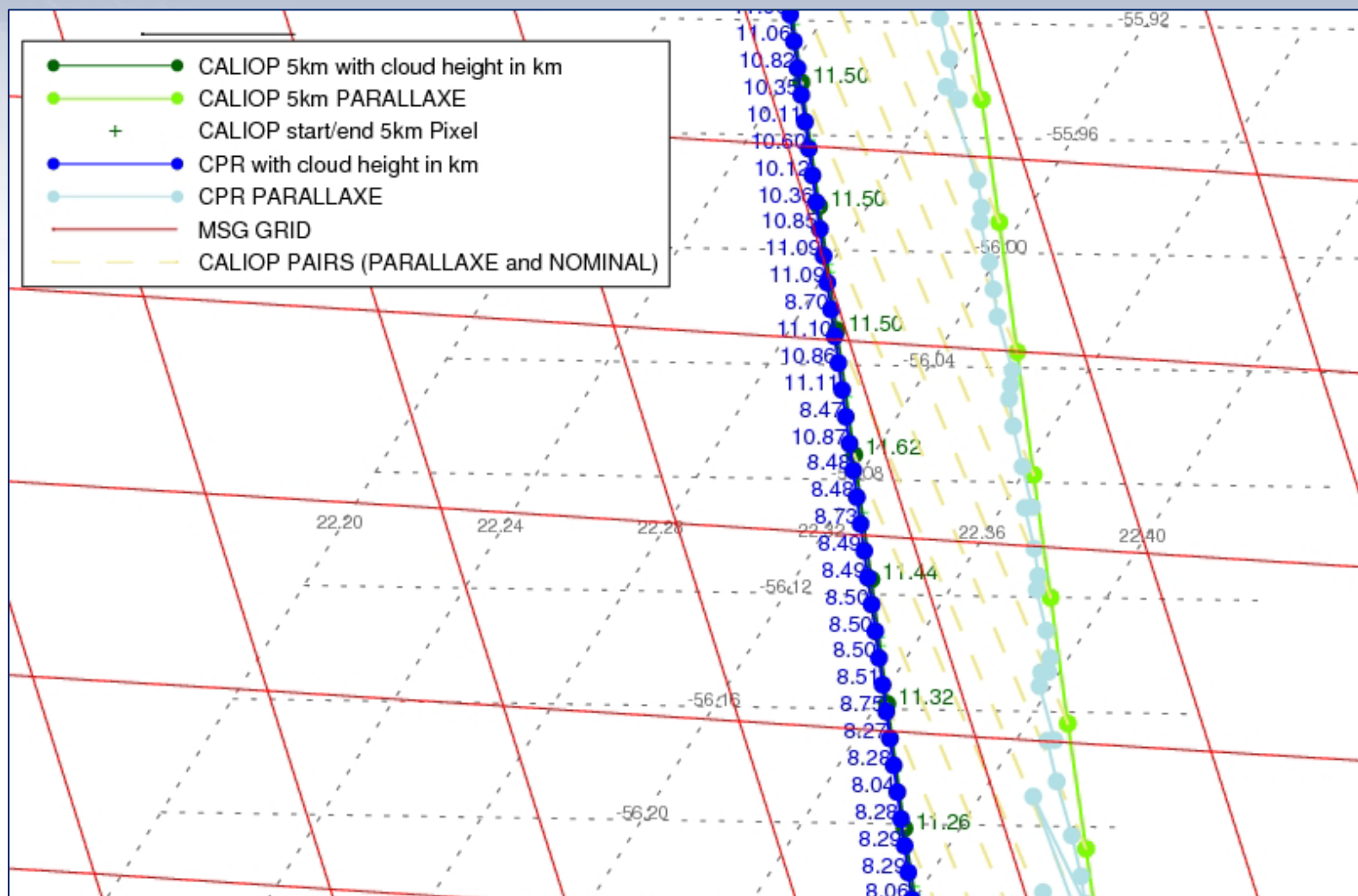■ = Missing frames in granule
M = MODIS image available

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CloudSat orbit 21147

2010 Apr 19 (109) 12:01:05 UTC | 1A-AUX | Granule 21147   Reflectivity: Low ▮ High   CIRA CloudSat DPC

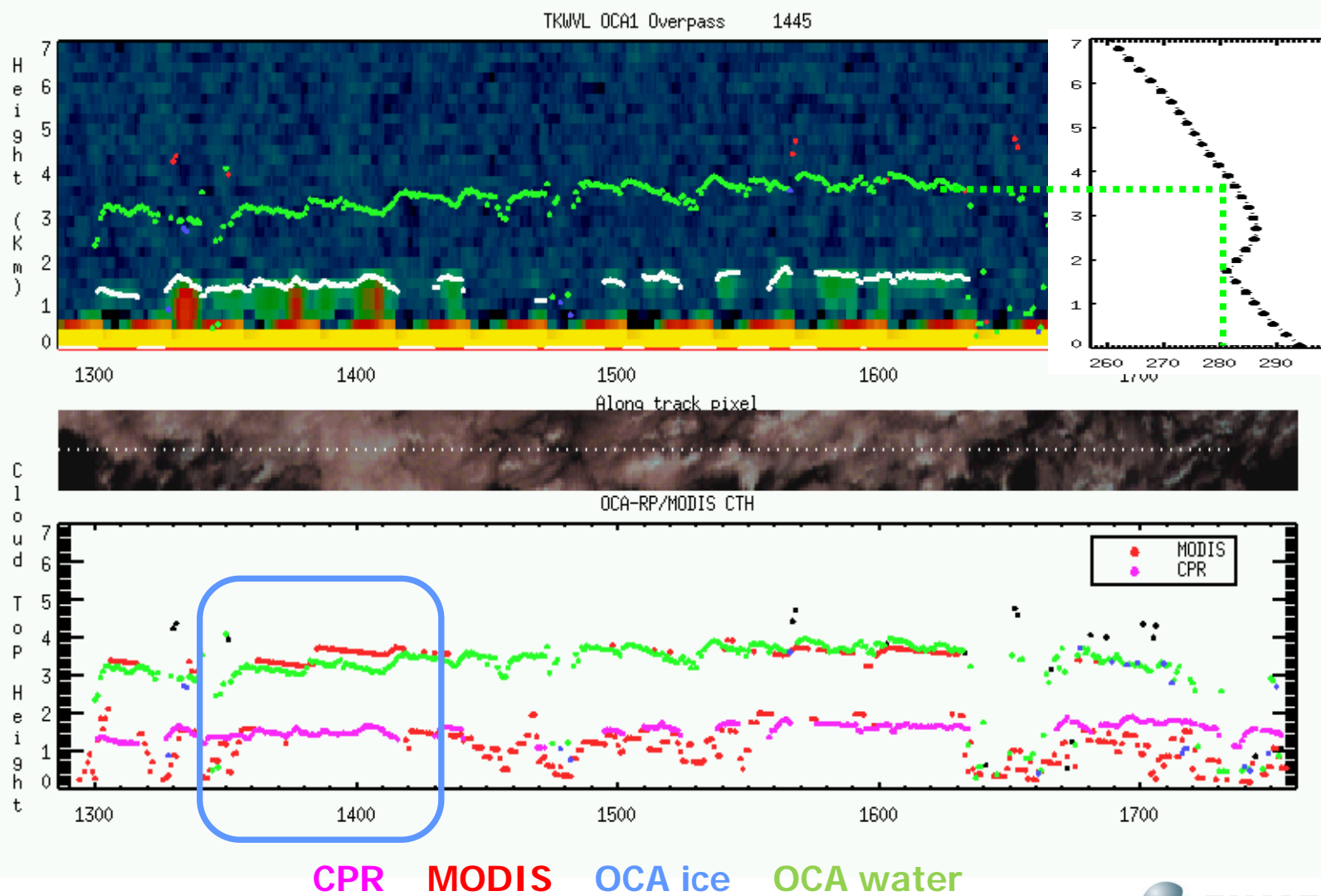# Parallax schemes - <none>, <fixed>, CALIOP, CPR

Analysis of a *single* Level-B file

OCA ice OCA water OCA quality control

Analysis of a *single* Level-B file

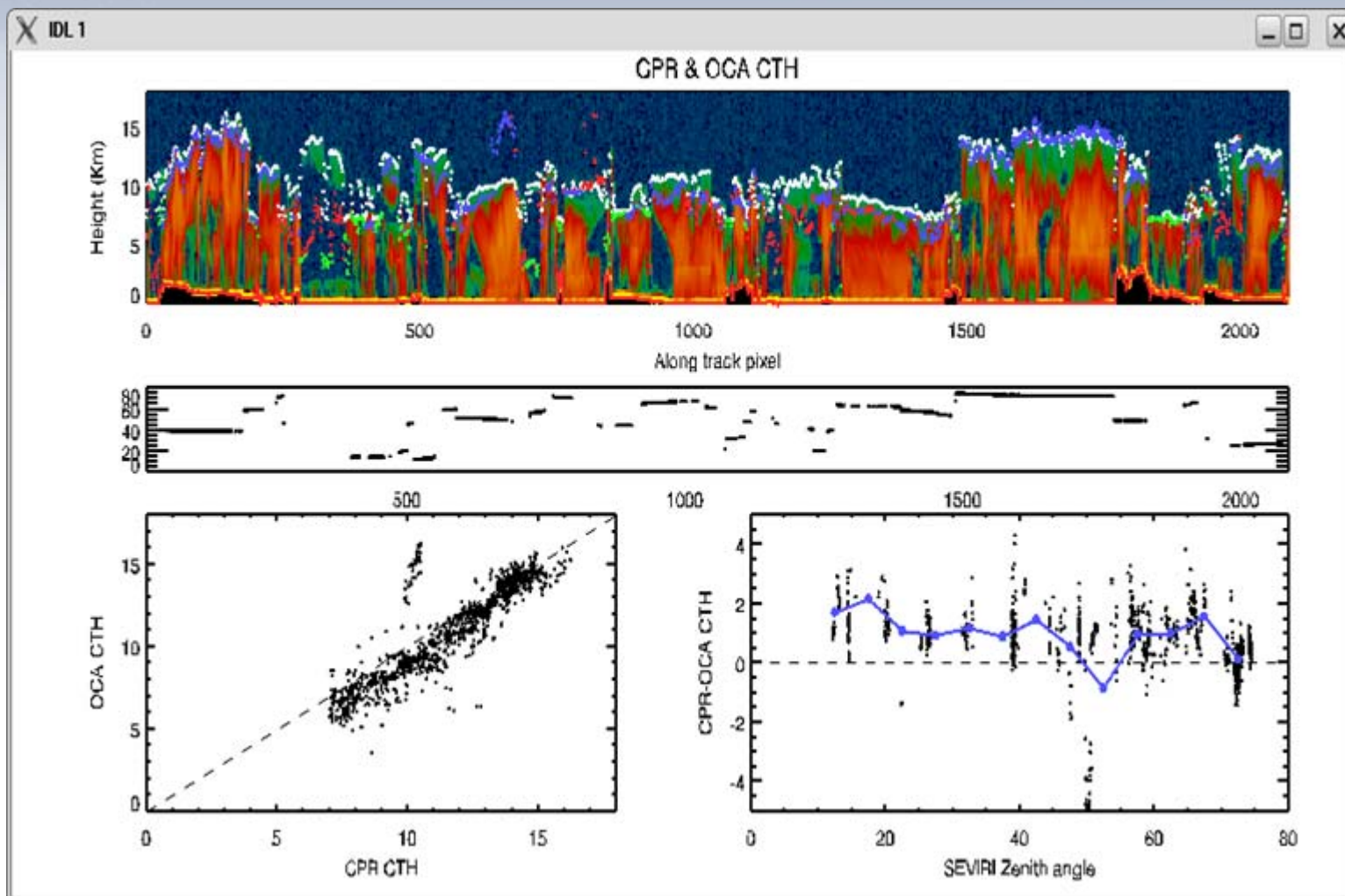CPR   MODIS   OCA ice   OCA water
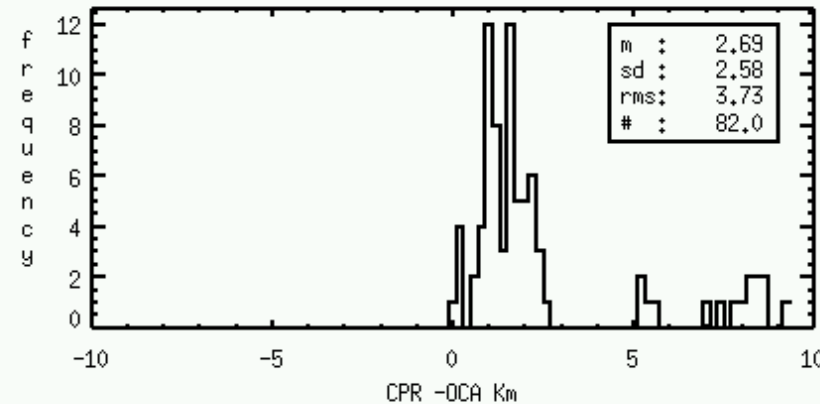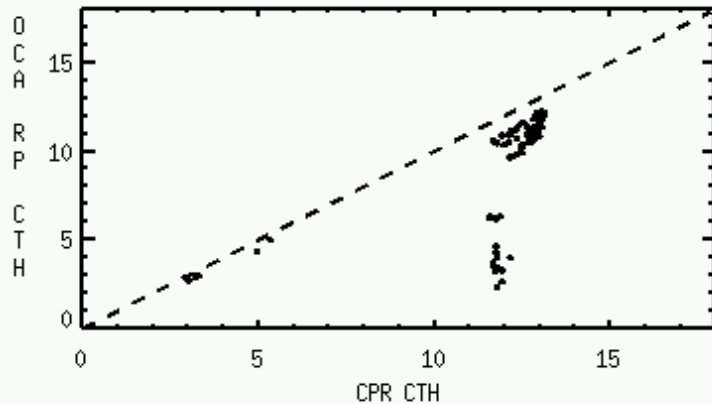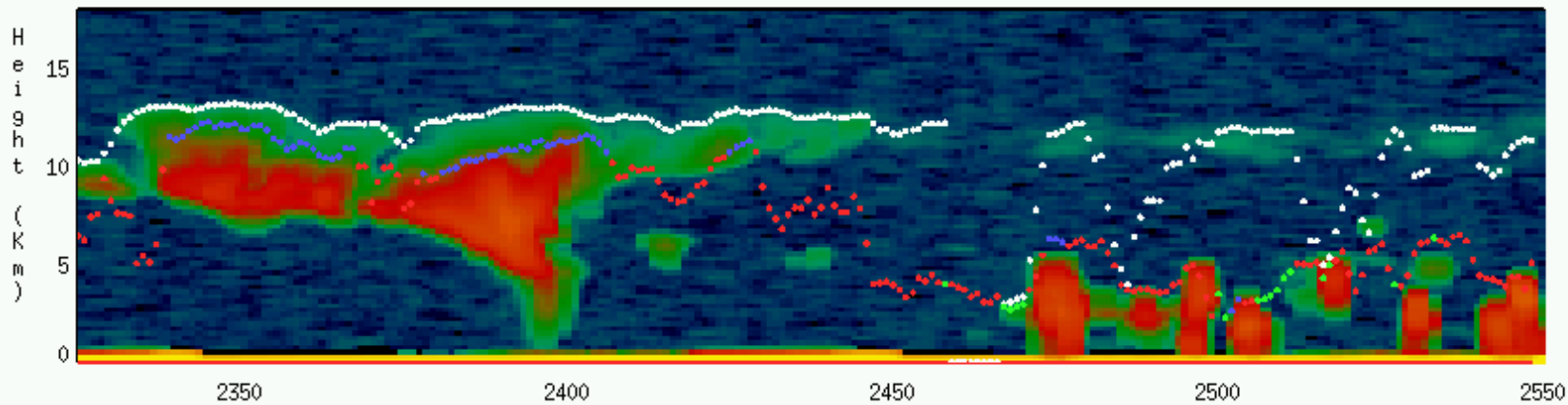
Analysis of a *merged* Level-B file

Getting the AVAC–S software

ops@eumetsat.int

- Access to
  - software repository
  - test data
  - documentation (e.g., a comprehensive user manual)
  - anomaly/bug tracking system

The software package comes "as is", no official support is provided.