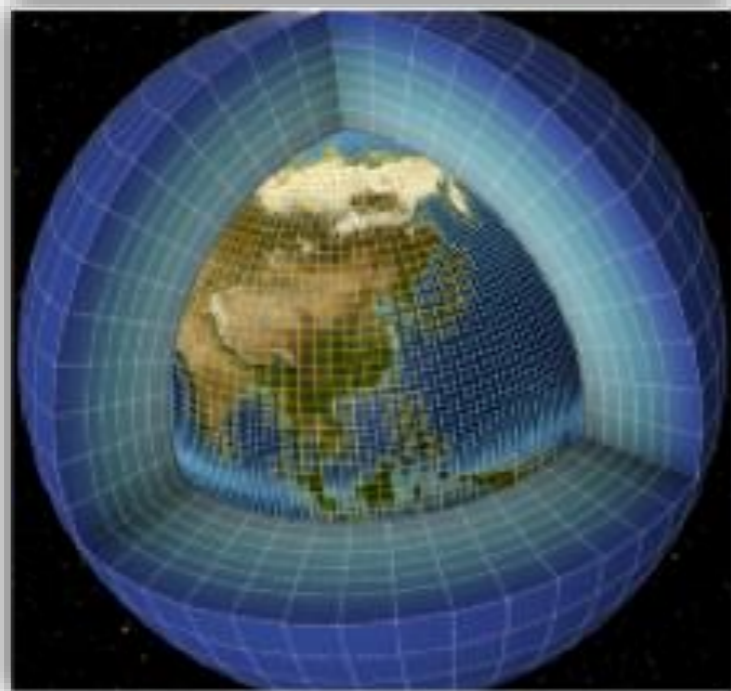
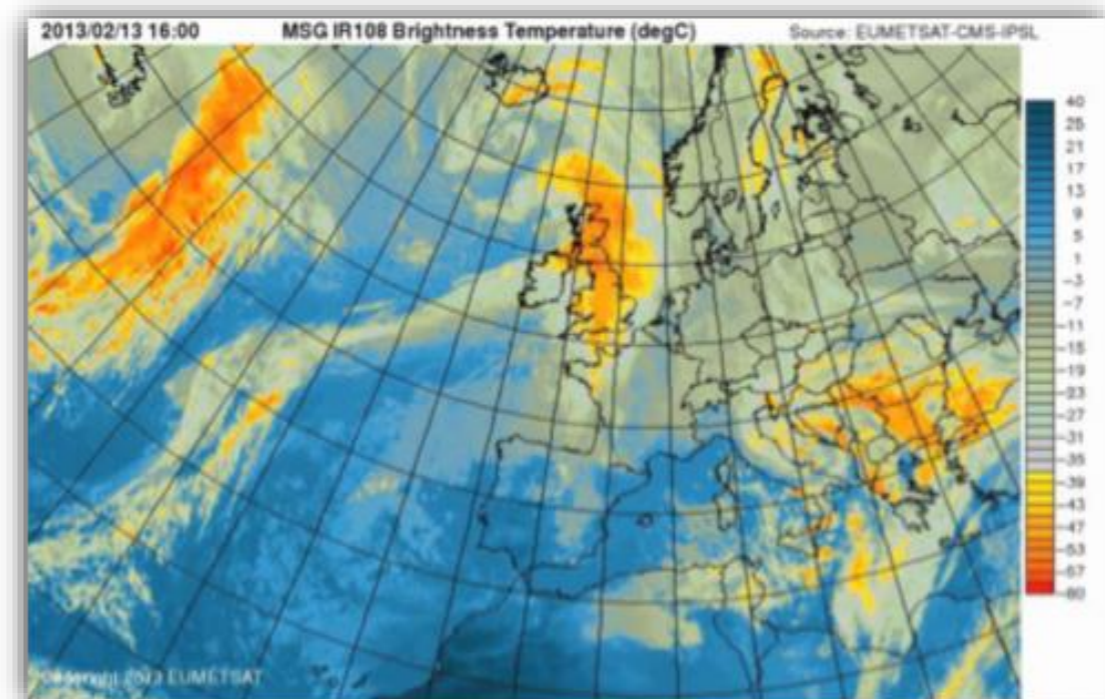


MÉS●CENTRE IPSL

Data you can find or access



Model data



Observational data

Objectives of data management on the mesocentre:

- The data close to the computing facility used by IPSL Labs
- To ease the use of observation and model data ⇒ IPSL: a unique place
- To allow a mix use of different data types (model data, in-situ, satellites, reanalyses):

- Which data?
 - Data produced by the IPSL scientific community
 - Data from other data centres or communities

The organised archive of data \approx 1.6Po

Different services proposed by the ESPRI team:

- Data management (acquisition, production, storage, backup)

A centralised management of datasets:

To avoid the duplication of dataset on individual user account.

Open data/protected data:

Some data are non public.

- Tools for distribution and computation on data, access to the data
- Documentation on data (cf web sites)
- User and project support, close to the scientific teams
- Dedicated workspaces for projects (specific storage for data exchange)
- DOI: IPSL is allowed to generate DOI on data (INIST convention)

What we do?



Host, manage, and distribute data...
Deliver by-products, algorithms, software, tools
Offer services to the scientific community and other end users

What we do?

The services around the observation data:

- Different types of observation data: in-situ, satellite, reanalyse, FCDR, etc.
- Data management, a collaborative task:
 - Centralised data of interest **on demand**
 - If you have dataset, you can propose to share it on the mesocentre
- Data from IPSL team or from other data centres (mirroring)
- Formatted in NetCDF in some cases
- Services for the valorization of YOUR dataset (website, dedicated access and quick-looks)

Where are the observation data on the mesocentre?

- **/bdd** — Long term datasets on water cycle, clouds, etc.
- **/etherfs** — Atmospheric chemistry dataset

How to find the information?

- On websites (today): climserv.ipsl.polytechnique.fr or cds-espri.ipsl.fr
- Mail to meso-support@ipsl.fr (Cathy Boone, Sophie Cloché, Karim Ramage)

Examples of observation data on /bdd

In-situ data:

- Campaigns measurement :CAL/VAL MT, balloons, etc.
- Systematic measurements: SIRTA
- Post-processing of in-situ Radiosounding: ARSA, TIGR
- Others.

Satellite L1/L2/L3 products :

- AMSU L1C, TRMM, SSMI, Wentz products (SSMI, TMI), GSSTF,
- CALIOP L1/L2, IIR L1/L2
- GEO (HDF) pour MT, METEOSAT, MSG, ISCCP, CLAUS, SAF-LAND
- ScaRaB 1/2, CERES, ERBE, GERB, NOAA-OLR
- POLDER1/2, PARASOL, MODIS, AVHRR,
- NVAP, GPCP, CPC, HOAPS
- AVISO, OISST (MW), OISST-NOAA, OAFLUX, SAFOSI, QUIKSCAT
- CFMIP-obs, GEWEX/CA, clear sky WV radiance, Emissivité surface MW
- Others

Satellite/model outputs for INDOEX, AMMA, HyMex (+ radar), ChArMEx

Examples of observation data on /bdd

Focus on reanalysis dataset: climate and satellite reanalysis

- On the IPSL mesocentre (and on IDRIS and TGCC)
- In NETCDF format (+ GRIB at IDRIS)
- Available through ssh, FTP or OpenDAP

(Re)Analyses

ECMWF (*protected by MeteoFrance convention*):

- ERA5
- ERA40
- ERA-Interim
- ERA20C
- Analyses 1.125°

COPERNICUS C3S:

- ERA5

MERCATOR-OCEAN:

- GLORYS2V3
- MEDRYS1V1
- OSTIA_SST

NASA:

- MERRA1/2

NCEP1/2

NCEP/CFSR v1

NCEP FNL

NOAA CIRES 20th century reanalysis v2 20CRv2)

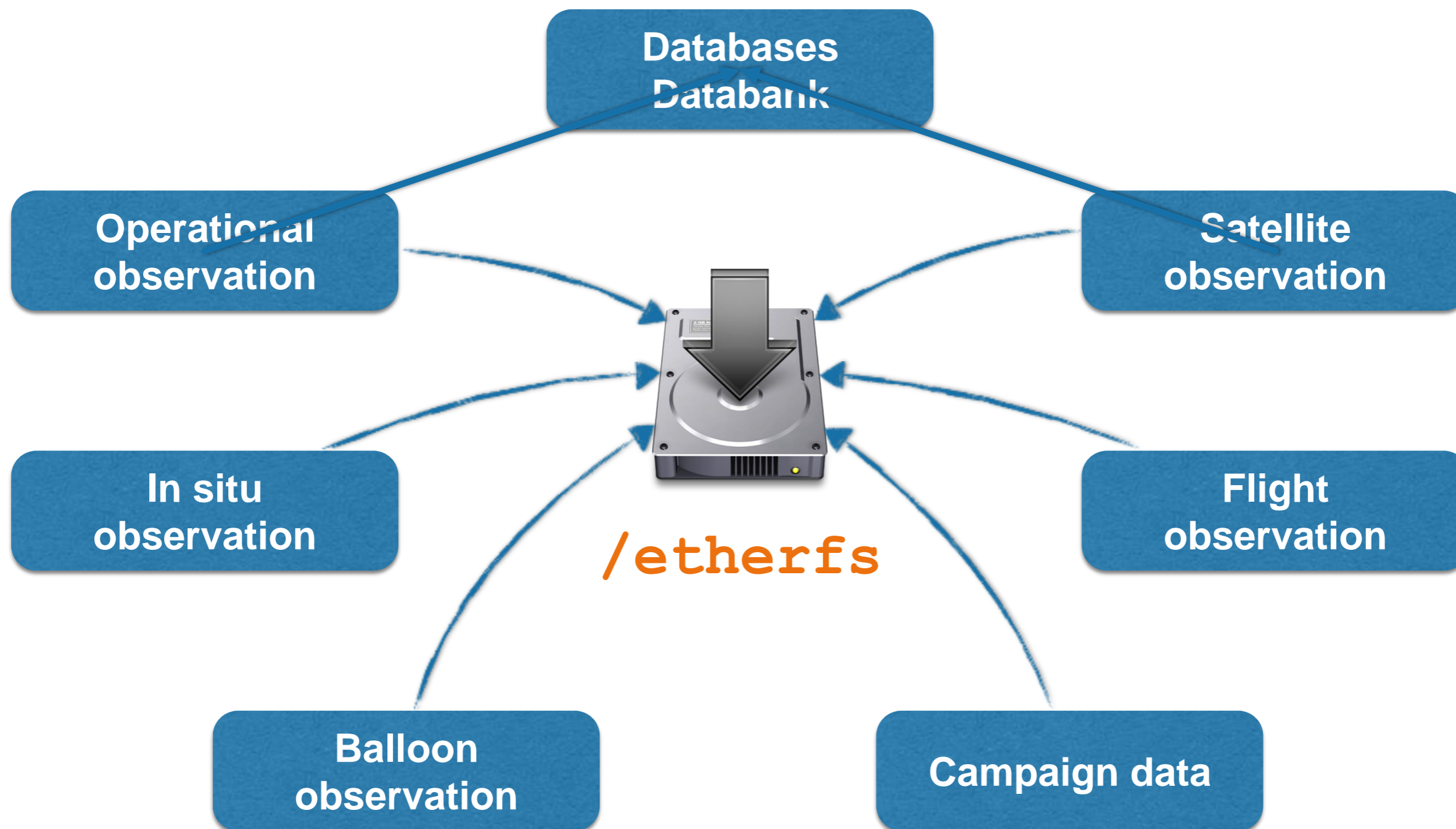
FCDR

Archive AMSU (2000- présent)

Archive SSMI (1987-présent)

GridSat Géostationnaires (1980-présent)

Examples of observation data on /etherfs



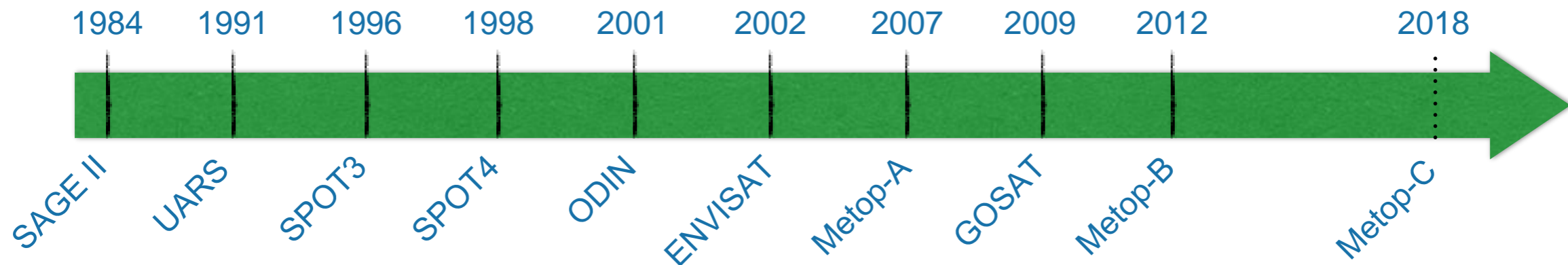
Volume \approx 470To

Which observation data on /etherfs ?

/etherfs data management context: 470To

A huge variety of data sets: 250 from level 1 to 4

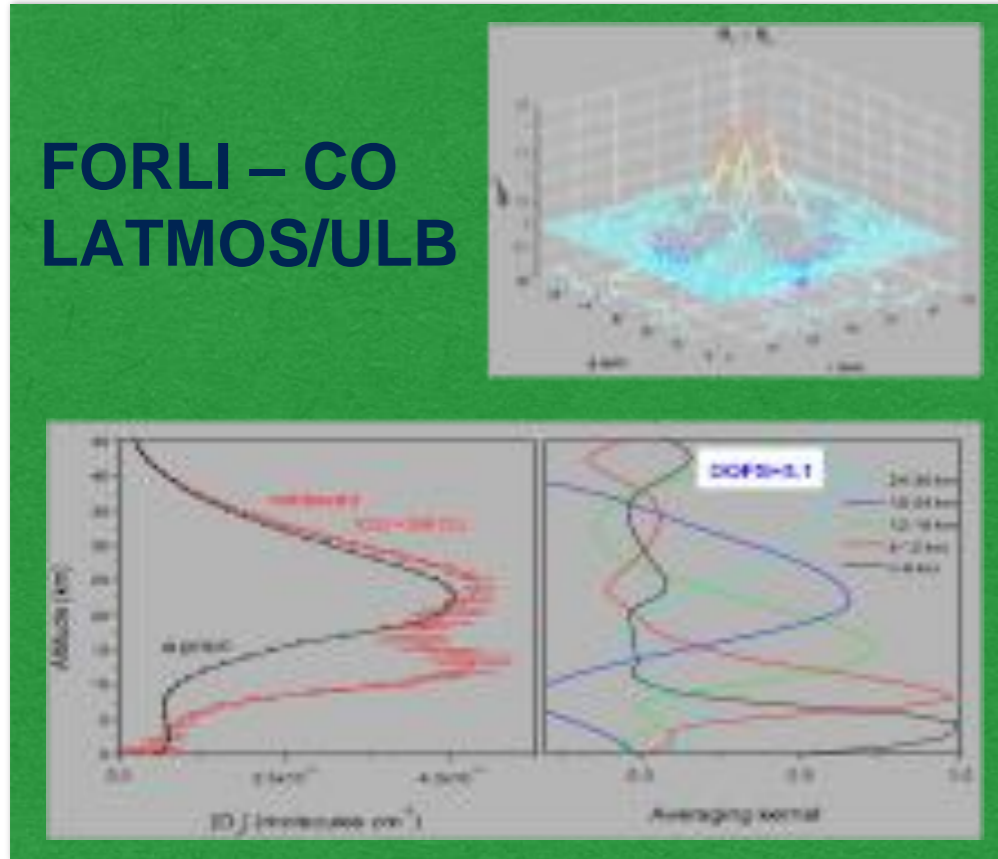
- Earth satellite data from UARS, ADEOS1, ERBS, POAMII, POAMIII, ODIN, ENVISAT, METOP/IASI – GOME2 and GOSAT missions



- Ground-based and in-situ data : Lidar, Radar, Balloon, gondolas, aircraft data, radio sounding, etc.
- Modelling data from REPROBUS, MIMOSA, etc.
- Ancillary data like spectroscopic data (GEISA), kinetic data, etc.

Satellite data management and distribution : IASI example

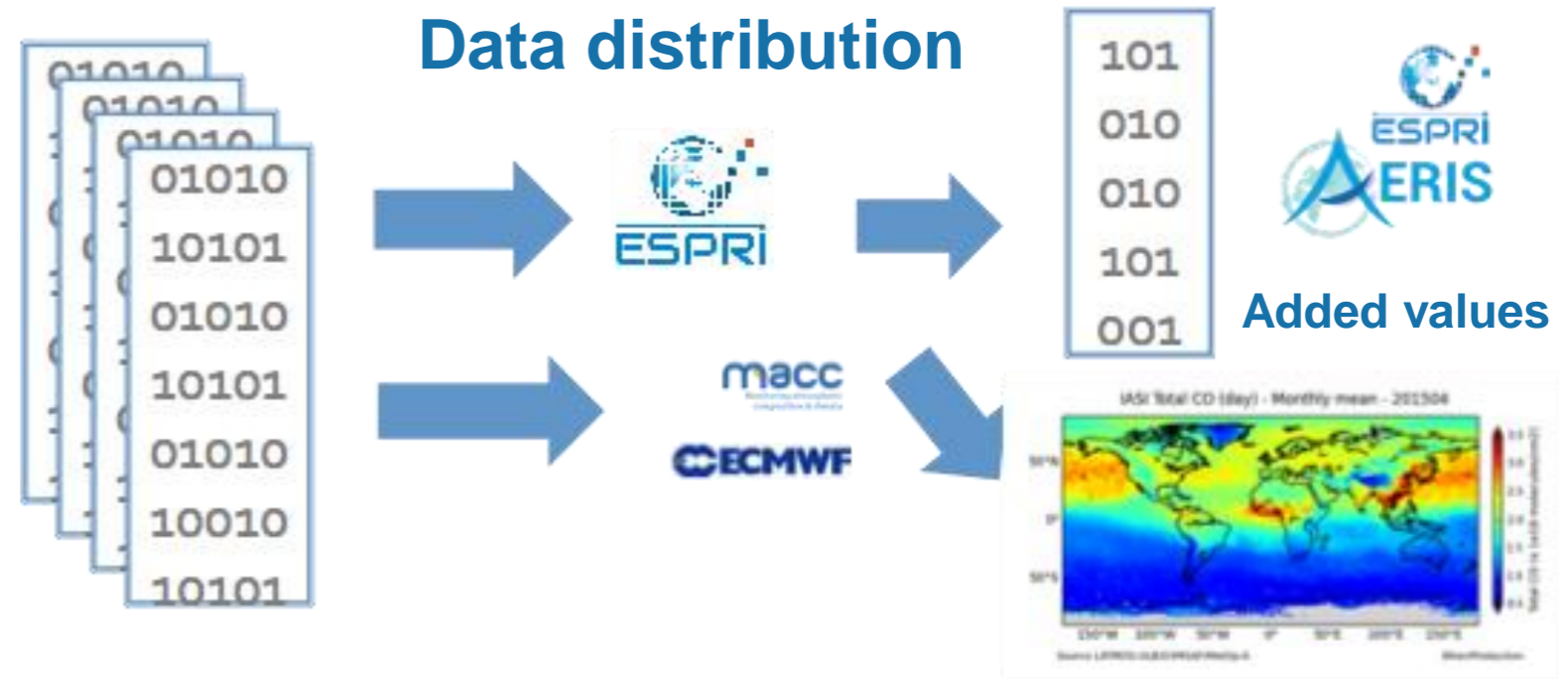
CO data treatment



CO data retrieval



IASI L1C spectra



Production level 2 data and QL on the fly

Currently, IASI O3, CO, SO2, HCOOH data retrieval and production uses IPSL Mesocentre.

Satellite data management and distribution

Satellite data and quick looks :

- On the IPSL mesocentre
- In native format
- Available through SSH or HTTP

Satellite data	Format
<i>IASI level 1C (METOP-A-B)</i>	BUFR
IASI level 2 (O3, CO, SO2, CH4, HCOOH, NH3)	ASCII, NetCDF
<i>AMSUA-MHS-HIRS4 level 1C (METOP-A-B)</i>	BUFR
<i>GOME2 level 1B (METOP-A-B)</i>	HDF
GOME2 level 2 (METOP-A-B)	HDF, NetCDF
<i>GOSAT level 1B / FTS/CAI</i>	HDF
<i>GOSAT level 2 / FTS/CAI</i>	HDF
SAGE II, UARS, SPOT3, SPOT4, ODIN, ENVISAT (level 2)	Native

Non public data

Satellite data management and distribution

Distribution through cds-espri.ipsl.fr

CO total column from IASI

Satellite : Projection : Date :

[How to read the data](#)
[Contact & publications](#)

[Metop-A CO data file for this day](#)
[Data file archive \(via calendar\)](#)

Carbon monoxide (CO)

How to read the data

Download this Readme LATMOS-ULB FORJ-CO data retrieved from IASI [here](#).

How to read the data since December 2, 2010 :

Each file contains data for one day of observation. In each file, each line corresponds to one observation. File names include date of observation. Their structure is :
iasi_CO_LATMOS_ULB_YYYYMMDD_vXXXXXXXXX.txt
 where : YYYY = year, MM = month, DD = day, XXXXXXXX = version number of the retrieval code.
 The data are organized in 60 columns :

- columns 1 and 2 : latitude and longitude
- columns 3 and 4 : date (yyyymmdd) and time (hhmmss)
- columns 5 : solar zenith angle
- columns 6 : IASI field of view (0, 1, 2 or 3)
- columns 7 : information flag about Eumetsat IASI L2 temperature profiles retrieval method (see ...)

Carbon monoxide (CO)

For any use in publication please contact Cathy Clerbaux (cathy.clerbaux@latmos.ipsl.fr)

Contact & publications

References :

Algorithm description

FORJ radiative transfer and retrieval code for IASI

D. Hurtmans, P-F. Coheur, C. Wespes, L. Clarisse, O. Scharf, C. Clerbaux, J. Hadji-Lazaro, M. George, S. Turquety J. Quart. Spectrosc. Radiat. Transf., 113, 11, 1391-1408, 2012

Validation

Carbon monoxide distributions from the IASIMETOP mission: evaluation with other space-borne remote sensors

M. George, C. Clerbaux, D. Hurtmans, S. Turquety, P-F. Coheur, M. Pommerehne, J. Hadji-Lazaro, D.P. Edwards, H. Worden, M. Luo, C. Rinstrand, and W. McMillan. Atmos. Chem. Phys., 9, 8317-8330, 2009

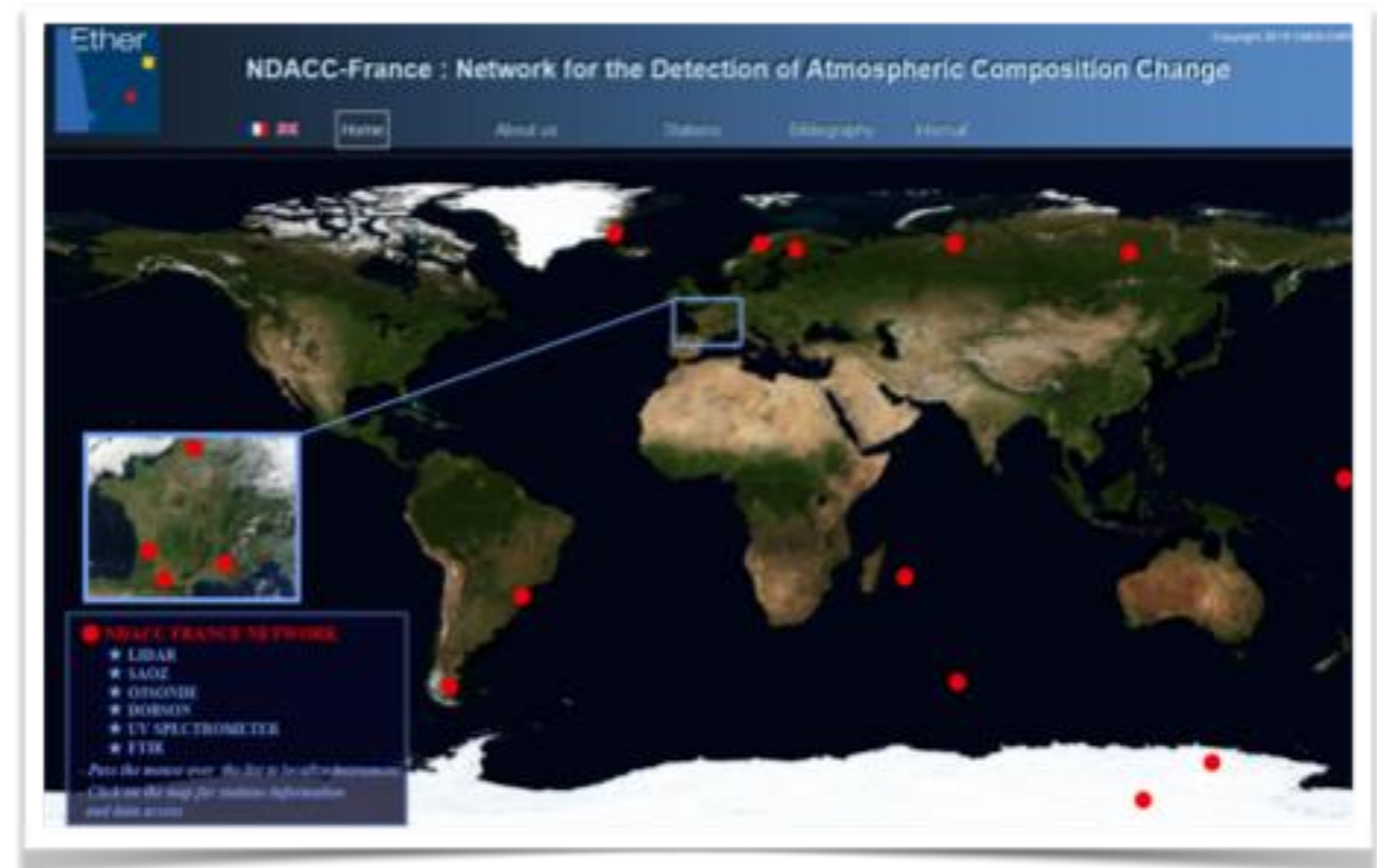
Ground based and in situ data

Ground based and in situ data and quick looks distribution (ACTRIS-FR)

- On the IPSL mesocentre
- In ames format
- Available through ftp or http

17 stations:

OHP, La Réunion, Dumont d'Urville, OMP, Villeneuve d'Ascq, Briançon, Scorebysund, Andoya, Sodankyla, Zhigansk, Salekhard, Bordeaux, Tarawa, Bauru, Kerguelen, Rio Gallegos, Concordia



Atmospheric components measured:

- O₃ tropo et strato,
- NO₂,
- Temperature,
- Aerosols

<http://cds-espri.ipsl.fr/NDACC/>