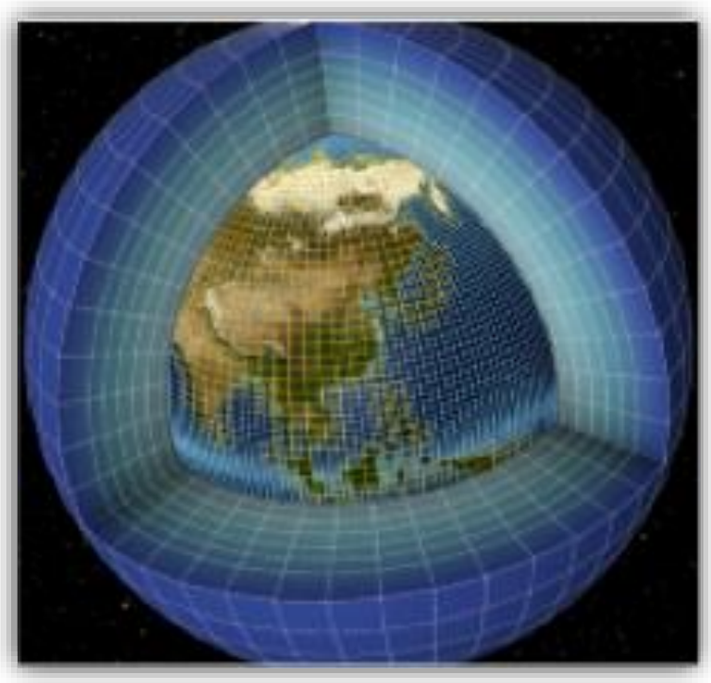
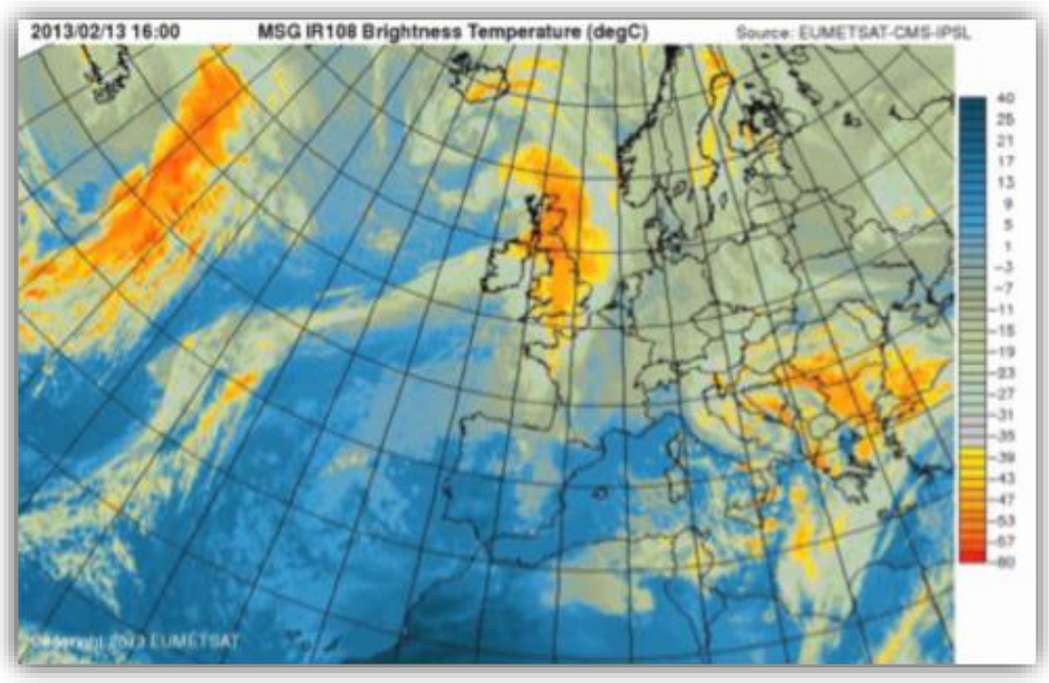
MÉSOCENTRE IPSL

Data you can find or access



Model data



Observational data

INTRODUCTION

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 ≈ 1.6Po

INTRODUCTION

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)

OBSERVATION DATA

What we do?

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

OBSERVATION DATA

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 Boonne, Sophie Cloché, Karim Ramage)

OBSERVATION DATA

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

OBSERVATION DATA

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

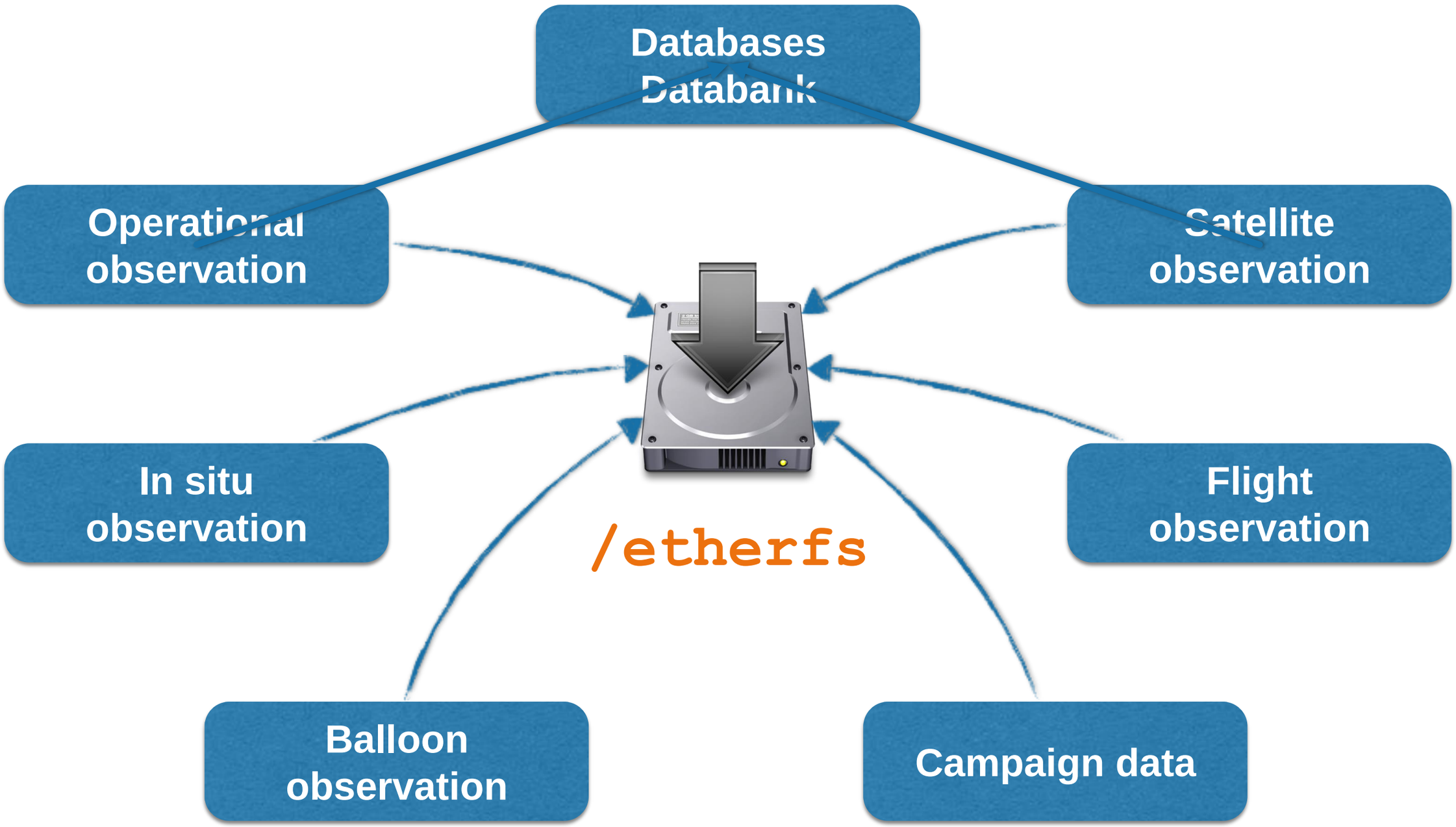
Archive AMSU (2000- présent)

Archive SSMI (1987-présent)

GridSat Géostationnaires (1980-présent)

AERIS OBSERVATION DATA

Examples of observation data on `/etherfs`



Volume ≈ 470To

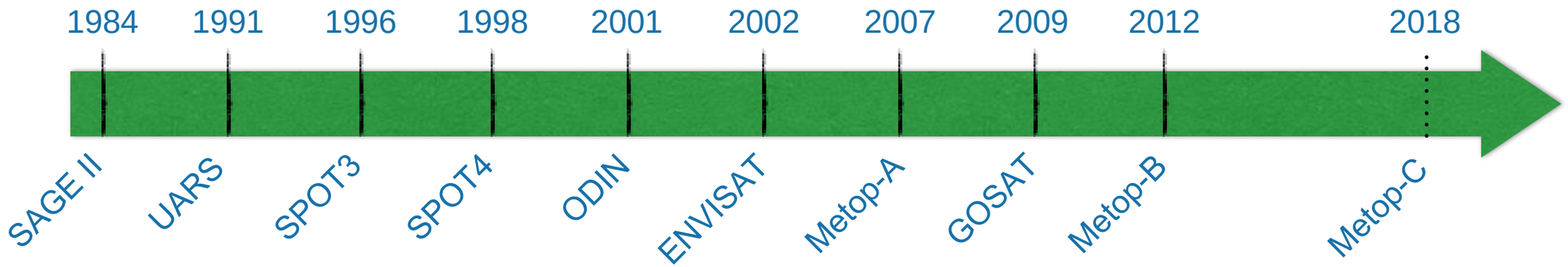
AERIS OBSERVATION DATA

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

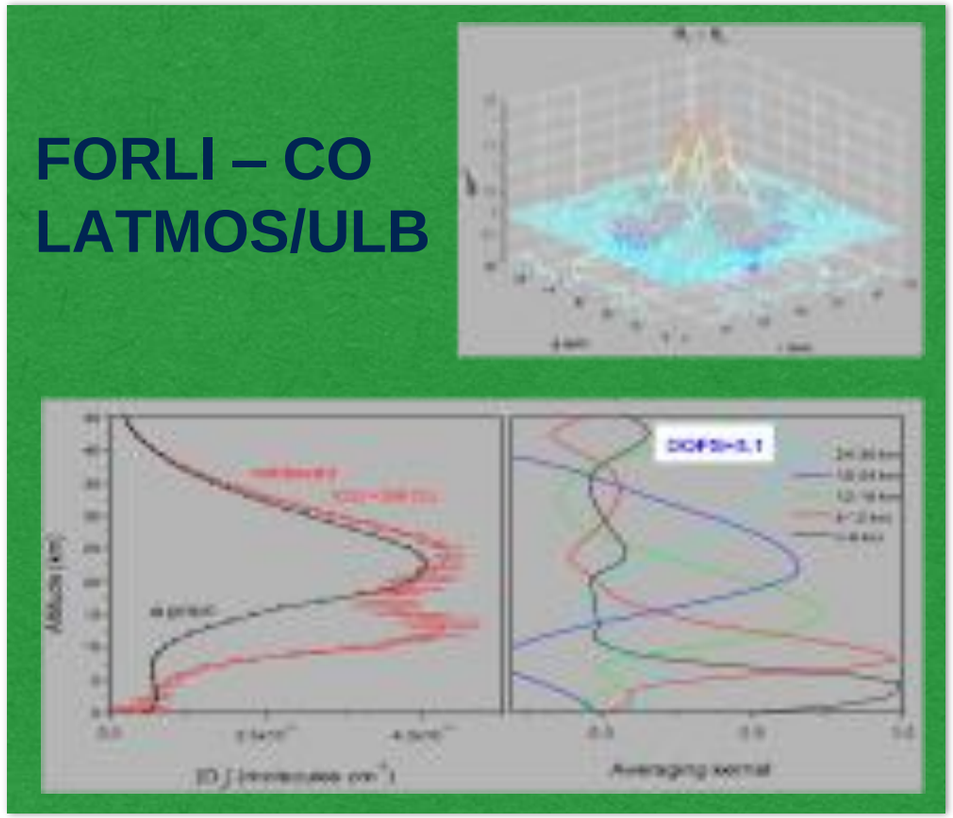


- Ground-based and in-situ data : Lidar, Radar, Balloon, gondolas, aircraft data, radio sounding, etc.
- Modelling data from REPROBUS, MIMOSA, etc.
- Ancillary data like spectroscopic data (GEISA), kinetic data, etc.

AERIS OBSERVATION DATA

Satellite data management and distribution : IASI example

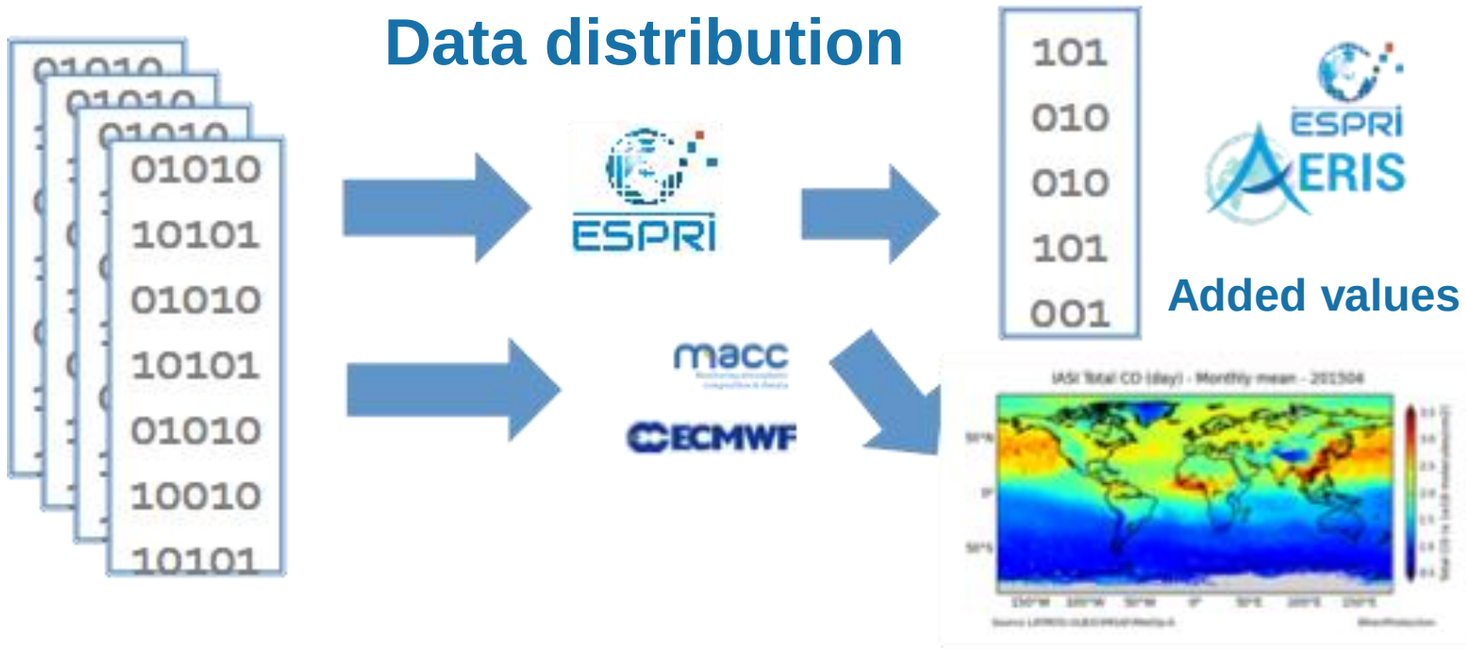
CO data treatment



CO data retrieval

IASI L1C spectra

Data distribution



Production level 2 data and QL on the fly

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

OBSERVATION DATA

Satellite data management and distribution

Satellite data and quick looks :

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

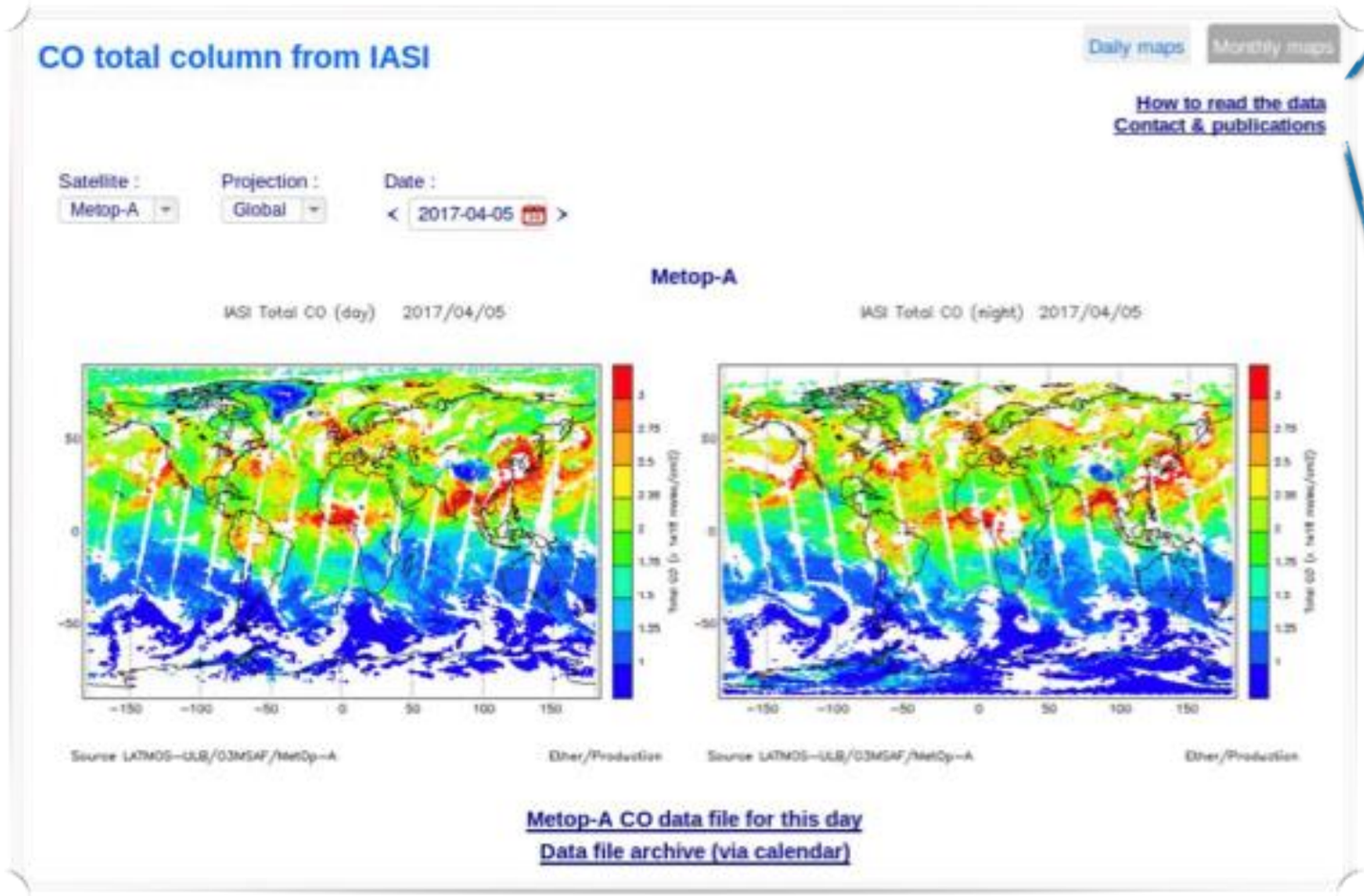
Satellite data	Format
IASI level 1C (METOP-A-B)	BUFR
IASI level 2 (O3, CO, SO2, CH4, HCOOH, NH3)	ASCII, NetCDF
AMSUA-MHS-HIRS4 level 1C (METOP-A-B)	BUFR
GOME2 level 1B (METOP-A-B)	HDF
GOME2 level 2 (METOP-A-B)	HDF, NetCDF
GOSAT level 1B / FTS/CAI	HDF
GOSAT level 2 / FTS/CAI	HDF
SAGE II, UARS, SPOT3,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

Non public data

OBSERVATION DATA

Satellite data management and distribution

Distribution through cds-espri.ipsl.fr

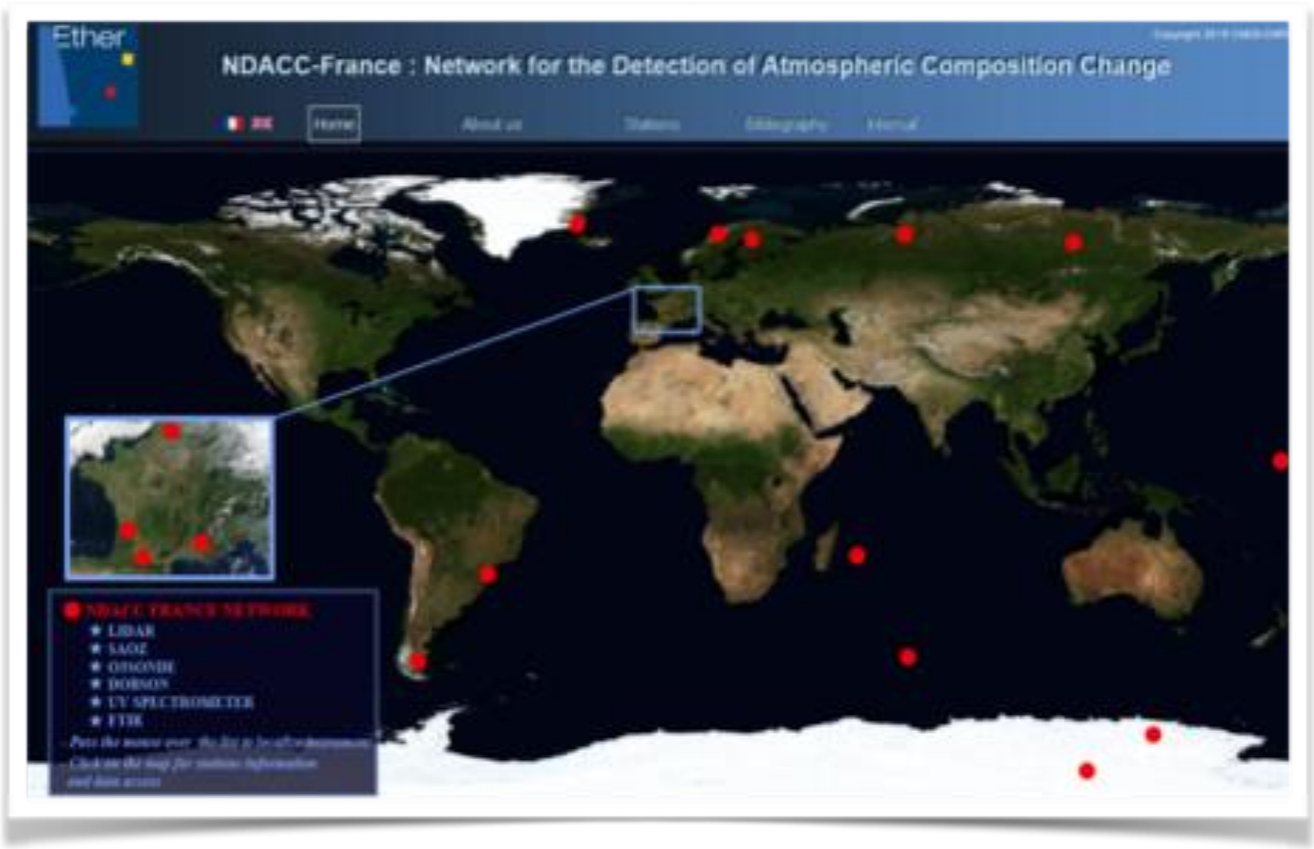


AERIS Observation Data

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:

- O_3 tropo et strato,
- NO_2,
- Temperature,
- Aerosols

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