ACTRIS
Aerosol, Clouds and Trace Gases Research Infrastructure

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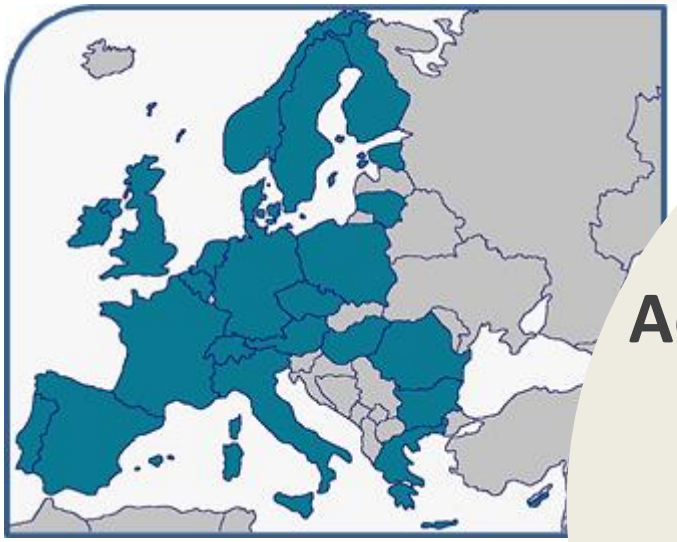
ACTRIS Coordination

ACTRIS

IAGOS Science meeting

18-19 June 2018

ACTRIS – A world-class Research Infrastructure



ACTRIS

Aerosols, Clouds and Trace gases Research InfraStructure

- High-quality atmospheric observations
- 21 European countries involved
- More than 120 RPOs involved
- Some services already operational
- Fully implemented by 2025

The ACTRIS Concept

An Atmospheric Research Infrastructure to provide:

- 4D variability of a multi-component system for detection of trends, source attribution and potential feedbacks processes

Multi-instrumented observational platforms

- capacity to understand and quantify of interactions between the atmospheric multi-phase components

Multi-instrumented exploratory platforms

- innovative approaches and methodologies for detection of atmospheric composition changes

Instrumental and ICT Expertises in Central Facilities

- training capacity to operators and users

The ACTRIS Approved Structure

European level Central Facilities

Head Office

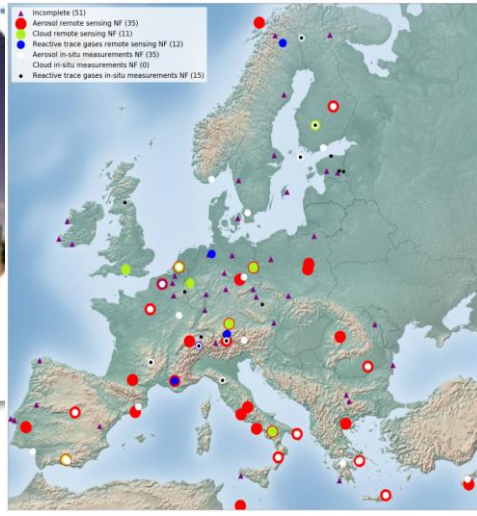
Data Centre

Centre for Aerosol In-situ measurements
Centre for Aerosol Remote sensing
Centre for Cloud In-situ measurements
Centre for Cloud Remote sensing
Centre for Reactive Trace gas In-situ measurements
Centre for Reactive Trace gas Remote sensing

National Facilities

Observational platforms

Exploratory platforms

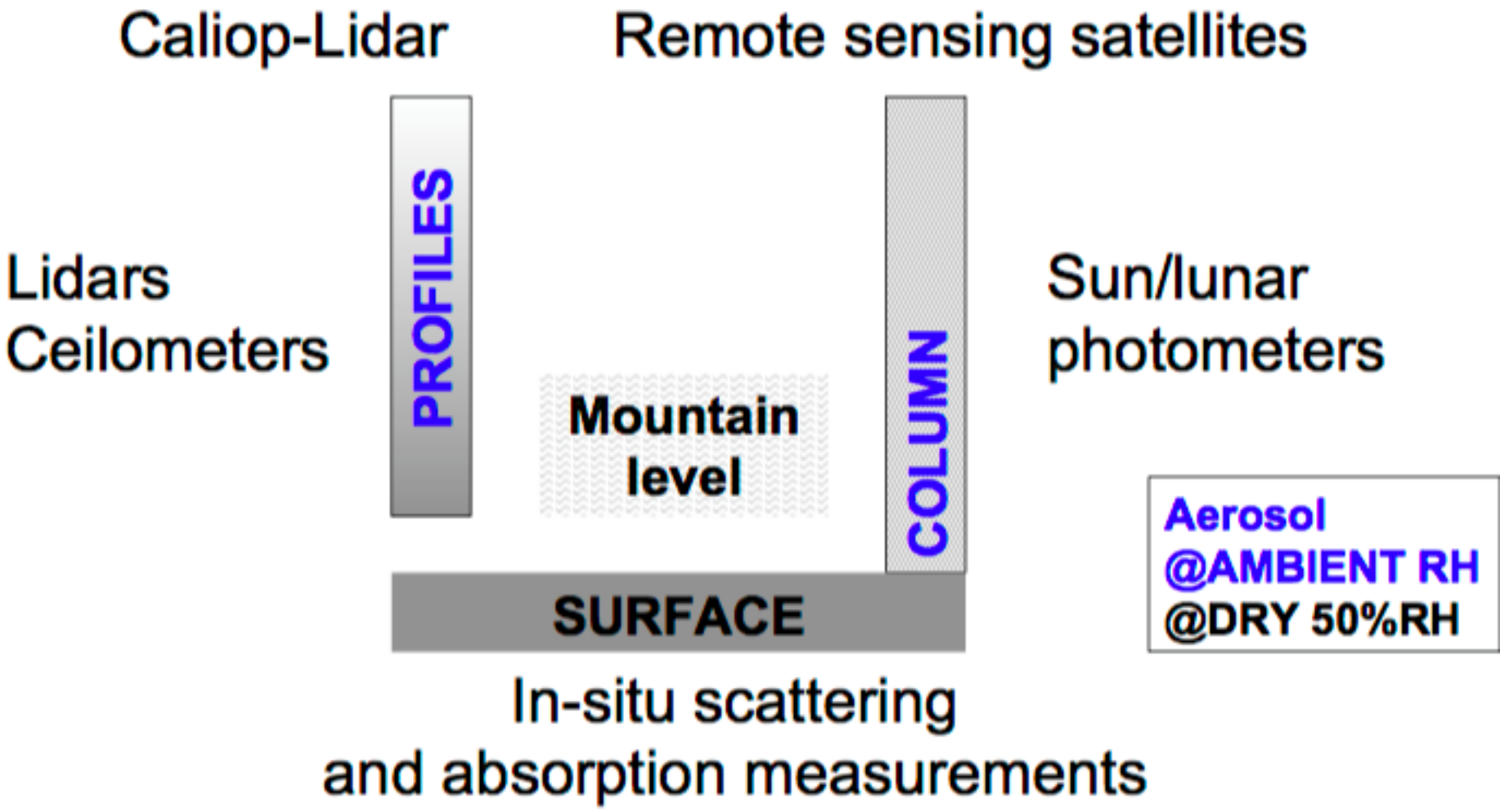


Preparing new combined products in ACTRIS

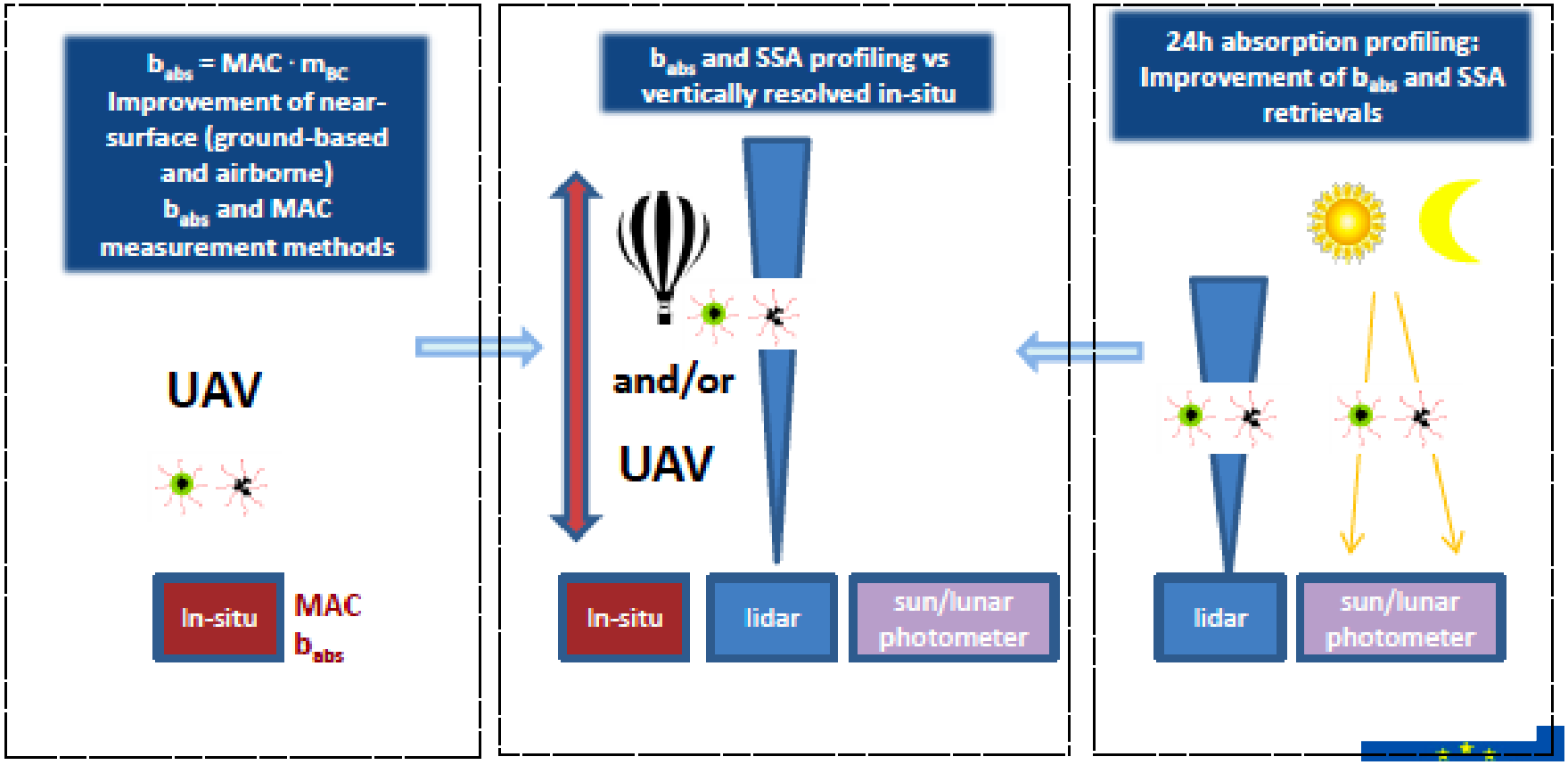
- **From in-situ to Profiles: Improving the accuracy of aerosol light absorption determinations**
- **The surface exchange and vertical transport of aerosol particles**
- **Model evaluation, assimilation and trend studies**

NRT Copernicus Pilot projects

Improving the accuracy of aerosol light absorption determinations



Improving the accuracy of aerosol light absorption determinations

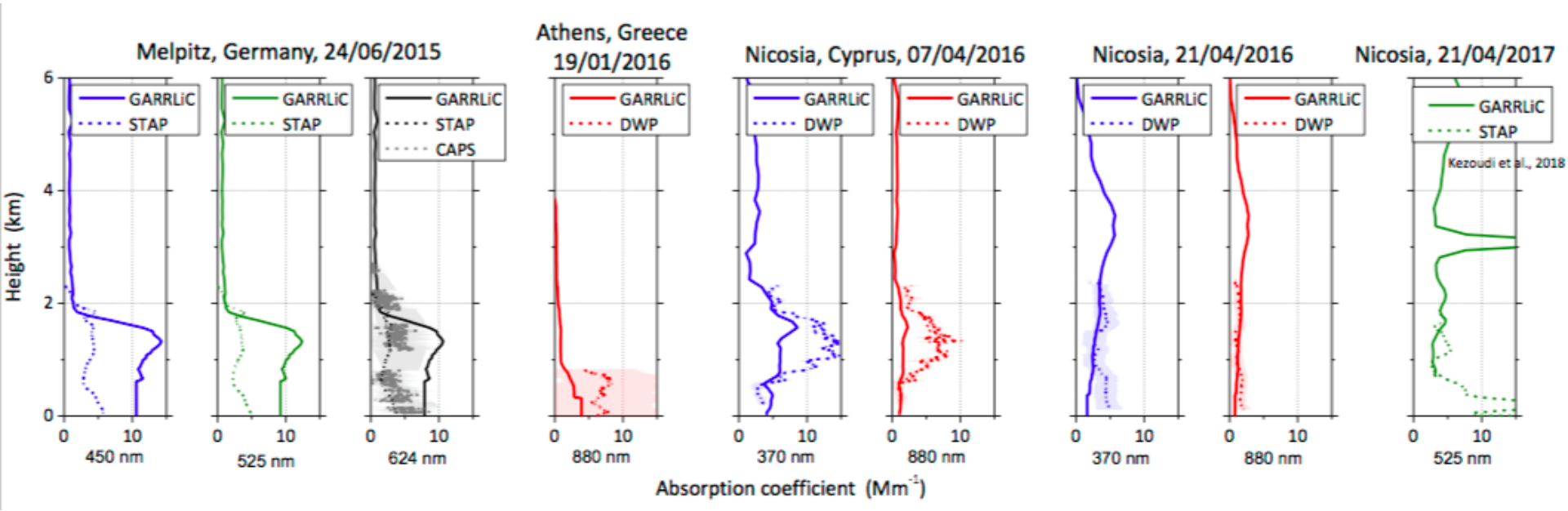


Measurement procedures (extinction/Abs/Scatt.)

Integration during ad-hoc campaigns

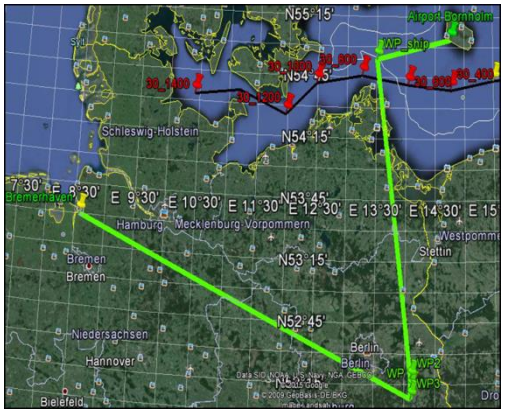
Profiles GAARLIC/ GRASP

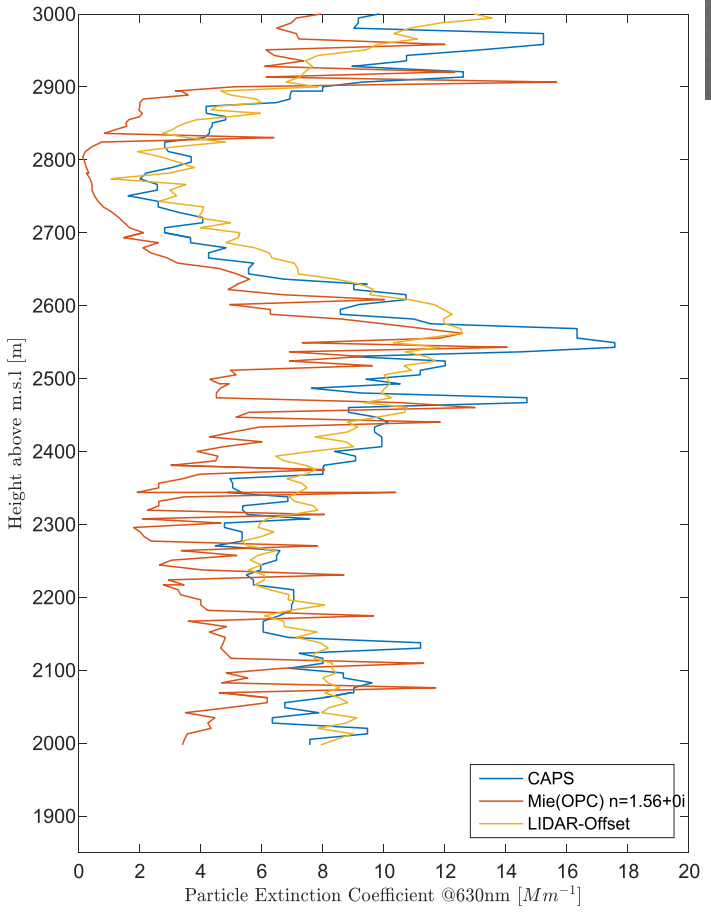
Improving the accuracy of aerosol light absorption determinations

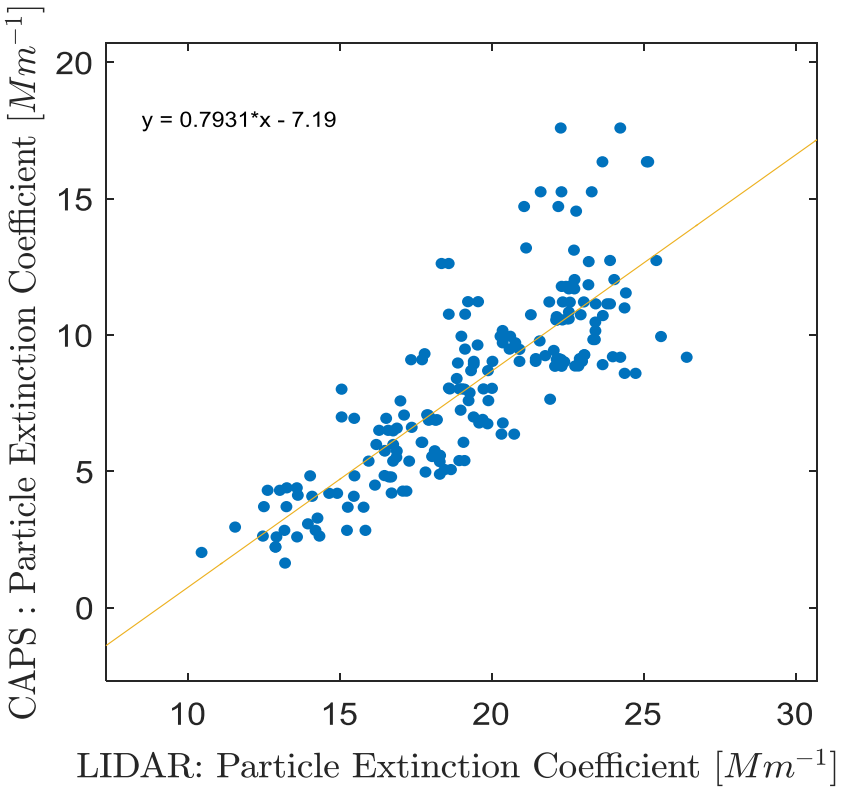


IAGOS – ACTRIS intercomparison

CAPS PM_{ex} vs. Lidar over Lindenberg observatory







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NRT Copernicus Pilot projects

ACTRIS Joint Research Activities

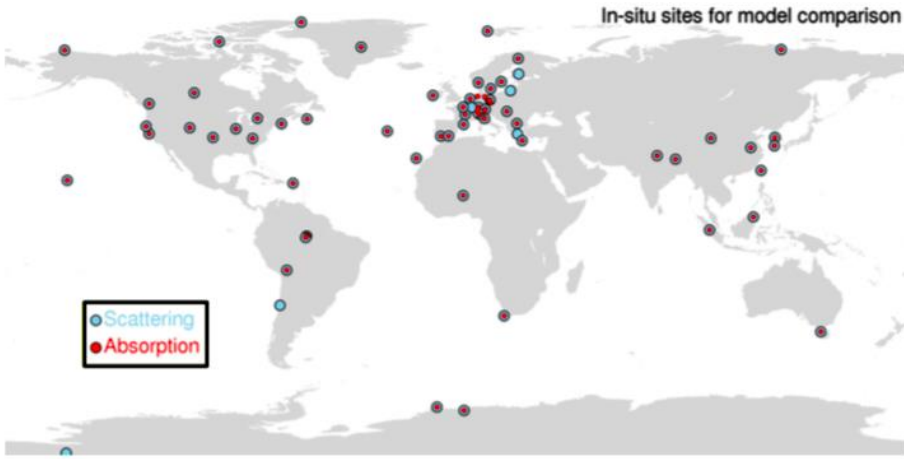
http://aerocom.met.no/trends

Model Validation for CAMS

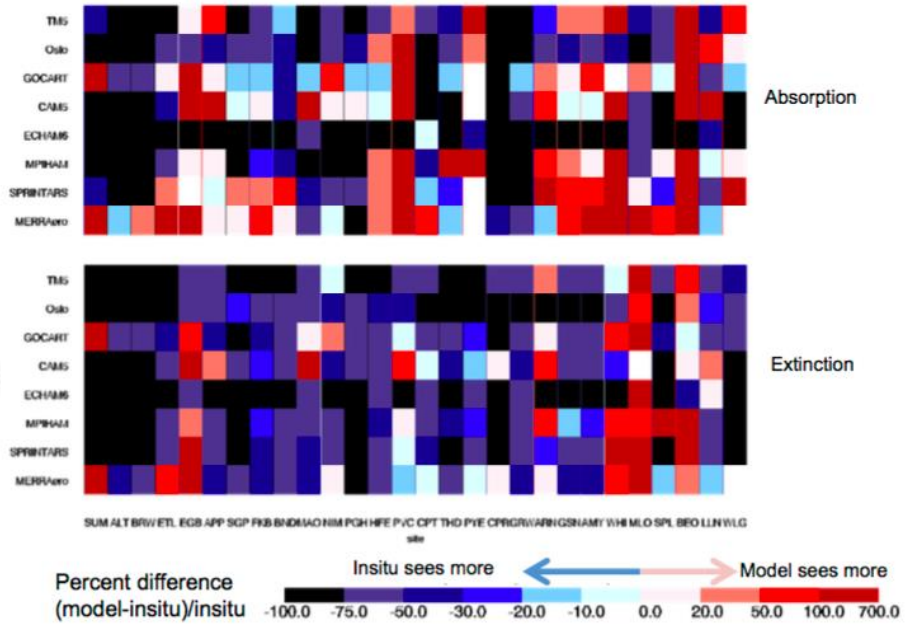
1. In-situ http://atmosphere.Copernicus.eu/chartscams_actris_deliverable/

→ Comparison ready for Scatt. Coeff.and abs. coeff.

→ to be implemented for other variables



- Sites with aerosol light scattering and/or absorption
- Fewer sites than AERONET
- Gaps in S. America, Africa, Middle East, Russia, Pacific Asia Nations

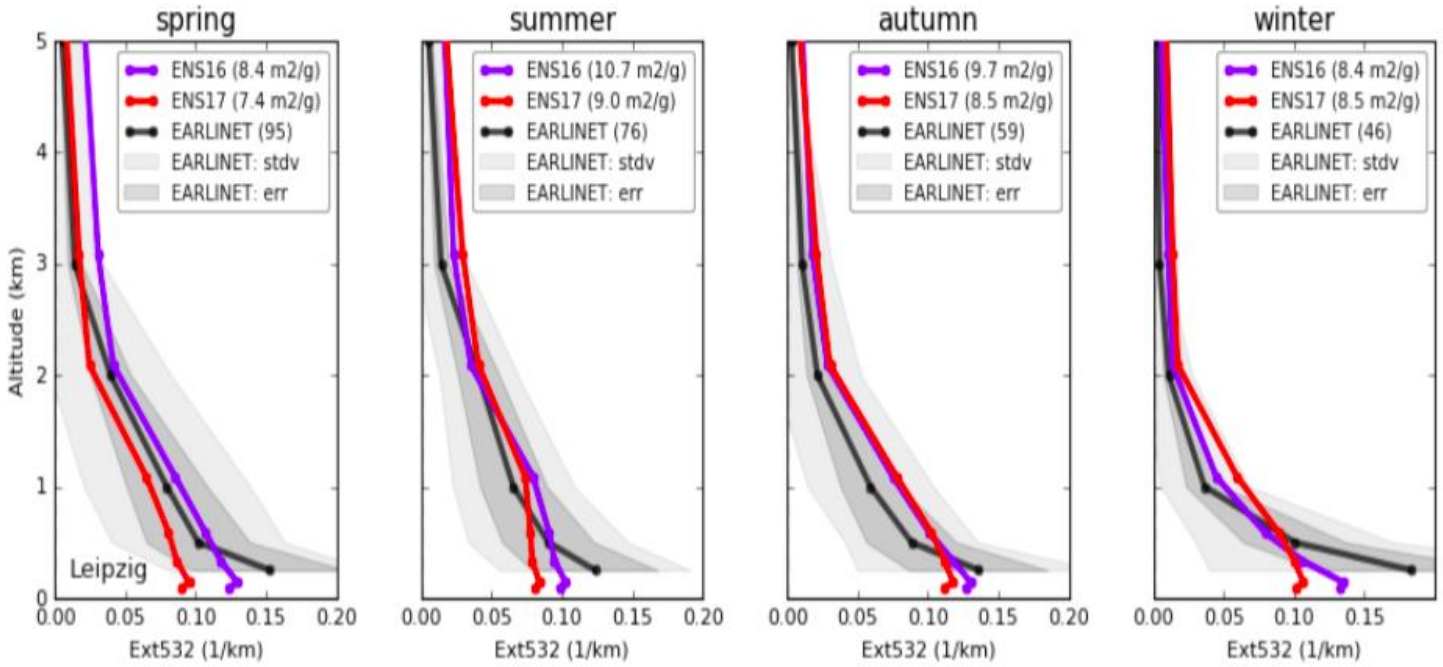


Model Validation for CAMS

2. Vertical Profiles

http://atmosphere.Copernicus.eu/chartscams_actris_deliverable/

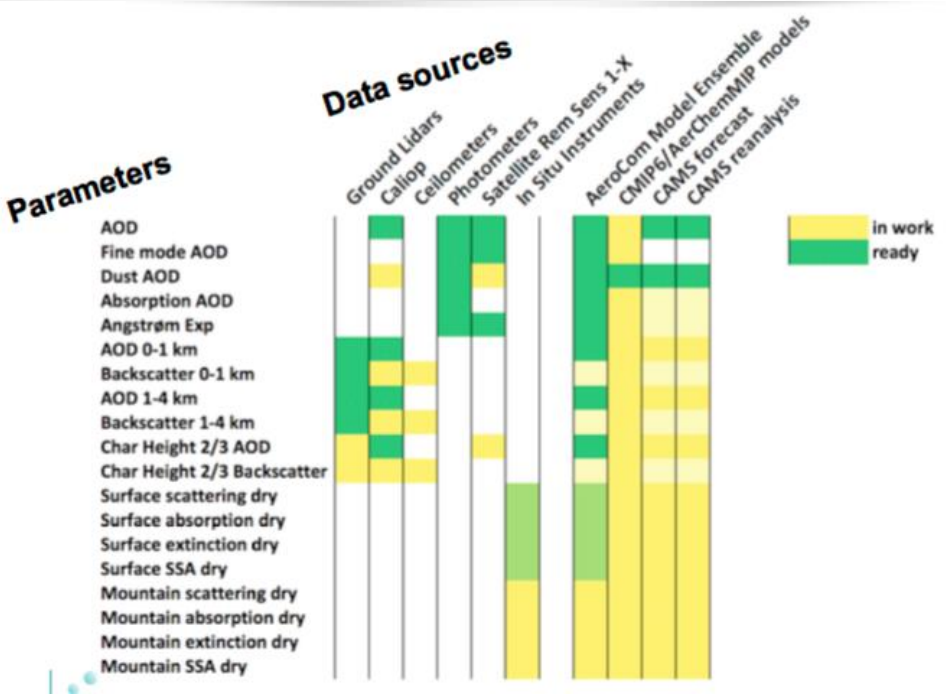
→ **Spatial and temporal validation with EARLINET Profiles**



*Seasonal extinction model profiles for 2016 (**ENS16**) and 2017 (**ENS17**) against Leipzig Earlinet climatological extinction profile*

NRT Delivery for CAMS

Request for Proposals from CAMS (June 2018)



→ **ACTRIS aerosol profiles for CAMS (ACTRIS-A pro CAMS) :** Conditions for delivering NRT Vertical Profiles

→ **ACTRIS in-situ Pilot for CAMS :** Condition for delivering NRT Size, Abs. Coeff, Scatt. Coeff and Composition

Conclusions

- Space for developing joint advanced products between ACTRIS and IAGOS
- Ensure more exchanges in technical developments (including exchange of experts) – IAGOS Package 2
- Some work done with ENVRIPLUS and to be done within ENVRI-FAIR
- Need to ensure the proper support is given for these joint developments (i.e. IAGOS, ACTRIS, ICOS, INGOS 2015 consultation)