

A central graphic for 'ATMOS 2021' featuring a globe with a satellite in orbit. The globe is surrounded by several circular inset images showing various atmospheric data visualizations, such as temperature profiles, cloud cover, and surface temperature maps. The background is a dark blue space with stars.

ATMOS 2021

Streamlining Synergy with Satellite Missions through Trans-National Access to Atmospheric Research Infrastructures

Doina Nicolae, National Institute of R&D for Optoelectronics
Iwona S. Stachlewska, University of Warsaw, Faculty of Physics
Carmela Cornacchia, Consiglio Nazionale delle Ricerche, CNR-IMAA
Arnoud Apituley, Royal Netherlands Meteorological Institute, KNMI
Rosa M. Petracca Altieri, Consiglio Nazionale delle Ricerche, CNR-IMAA
Ulla Wandinger, Leibniz Institute for Tropospheric Research, Leipzig, Germany
Vassilis Amiridis, National Observatory of Athens, Greece
Ottmar Möhler, Karlsruhe Institute of Technology, Karlsruhe, Germany
Giuseppe Gargano, Consiglio Nazionale delle Ricerche, CNR-IMAA

Doina Nicolae

Romania

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Contributions in the past

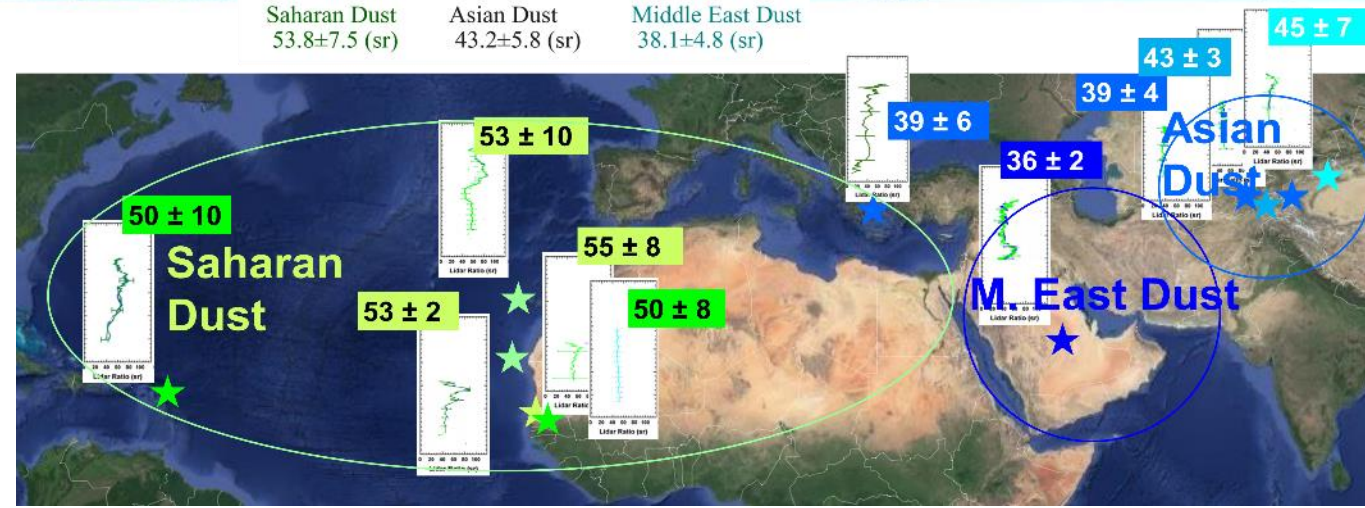
Long-term activities

- Aerosol products from Calipso by correlative observations with EARLINET
- Aerosol products from CATS by correlative observations with EARLINET
- NH3 IASI & CrIS validation using FTIR stations
- HCHO & NO2 TROPOMI validation using the FTIR network
- Wind products from Aeolus by correlative observations with ground-based cloud radars and Doppler lidars
- Aerosol products from Aeolus by correlative observations with EARLINET

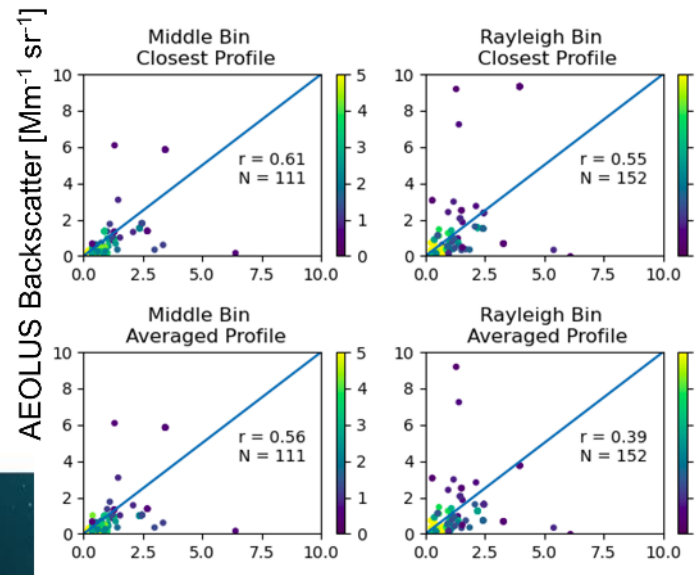
Intensive campaigns

- PRE-TECT experiment >>> to separate dust from total aerosols in CALIPSO: Crete, Spring 2017
- ASKOS experiment >>> AEOLUS Cal/Val: Cape Verde / Summer of 2021, 2022
- TROPOMI Validation Experiment >>> aerosols, ozone, NO2: Cabaw, 2019
- ... many other

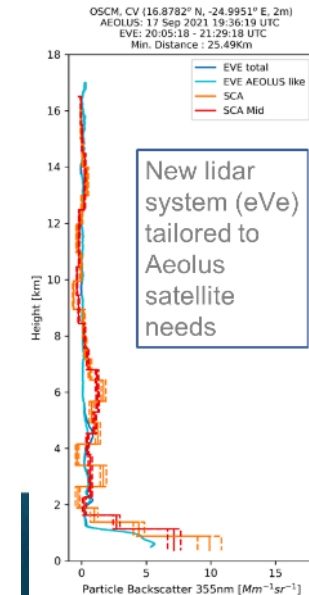
Saharan Dust 53.8±7.5 (sr) Asian Dust 43.2±5.8 (sr) Middle East Dust 38.1±4.8 (sr)



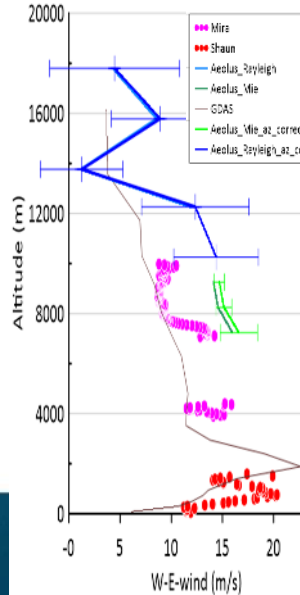
EARLINET Overpasses - Co-Polar Backscatter Coefficient



EARLINET Co-Polar Backscatter [Mm⁻¹ sr⁻¹]



eVe lidar (co-polar)



Aeolus vs. cloud radar and wind lidar

Opportunities in the future



ATMO-ACCESS project: access to facilities and services operated by ACTRIS, ICOS and IAGOS

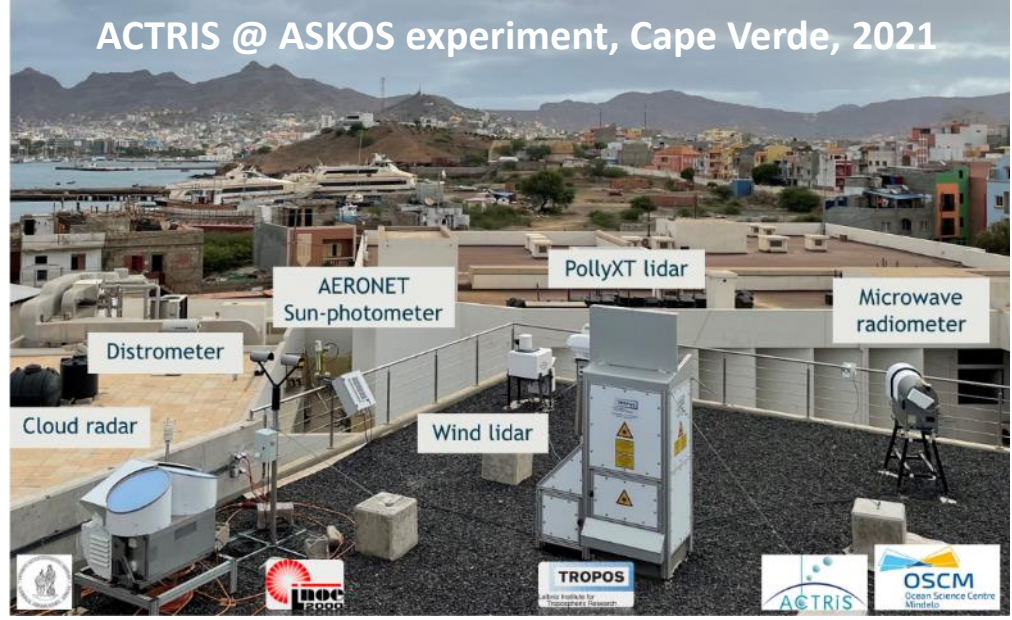
- Access to multiple stations (Observation Facilities, Mobile Exploratory Platforms)
- Access to Central Laboratories
- Access to multiple components (aerosol, clouds, trace gases / remote sensing, in-situ)
- Recurrent access (calibration)
- Combined access: (physical + remote + virtual)


Potential projects:


- Access to tailored products from ACTRIS reactive trace gases remote sensing stations (corelative)
- Cal/Val of Aeolus wind products by ground-based 24/7 Doppler lidars (corelative)
- Cal/Val of EarthCARE aerosol & cloud products by ACTRIS aerosol and cloud remote sensing stations (corelative)
- EarthCARE Cal/Val campaign in the Eastern Mediterranean in Spring 2024 (campaign)
- EarthCARE HALO aircraft Cal/Val campaign for in Autumn 2024 (campaign)


Long-term collaboration agreements with atmospheric Research Infrastructures

- Highly coordinated
- Geographically distributed (Europe+, diverse environments)
- Standardized workflows and procedures
- Fixed and mobile facilities, including calibration laboratories
- Dedicated offices for access to facilities and services
- Training & supporting expertise
- Collaboration with European and global networks



 Co-design of the access (user – provider)

 Complex projects: combination of virtual, remote and physical access / research, technology, training

 Decrease of costs through coordinated TNA

