HARMONIA
International network for harmonization of atmospheric aerosol retrievals from ground based photometers

HARMONIA news

Our action is growing everyday and new activities are planned for the next period.

New call for Grants

We are pleased to announce a new cycle of grants in the framework of HARMONIA; including STSM, VM and ITC conference grants. Calls will remain open until capacity is filled.

Details for HARMONIA Grants

The SORBETTO winter school

The third edition of the international school, in winter edition “SORBETTO: SOlar Radiation Based Established Techniques for aTmospheric Observations” held in Rome and Frascati from 6 to 10 February 2023 has successfully concluded!

HARMONIA organised a dedicated session about the action and the ongoing activities and invited 4 expert scientists to talk about related topics. HARMONIA also provided financial support to 12 students to attend the school, including 6 students from ITC and 3 from Near Neighbour Countries.

More Details

Photos From SORBETTO

Why the Complex Refractive Indices of Mineral Dust Matter

Webinar by Gregory Schuster (NASA, US), on 22 March 2023. The lecture will focus on Why the Complex Refractive Indices of Mineral Dust Matter

Register

EO4GEO Workshop on Aerosol monitoring and effects on climate / air quality

March 31st , 9-14 CET, Location at Un. Of Patras,GR auditorium and online.
Moderators: **Andreas Kazantzidis** (Un. of Patras), **Stelios Kazadzis** (PMODWRC)
Related projects: Metrology of Aerosol Optical property (EMPIR-MAPP),

Harmonia COST action
Aerosols in the atmosphere play an important role on both climate and air quality. Aerosol measurements from different sensors and modeling is important as their effect on earth-atmosphere balance on a global scale is still quite uncertain, while they have effects in a number of other areas (air quality and health, atmospheric processes, aviation , solar energy etc).
The workshop aims to provide a training workshop on aerosol observations and effects including:
· **Measurement basic principles and global aerosol networks and global aerosol databases**
· **Measurement sensors and standards**
· **Aerosol effects and applications**
We aim on an audience including students, MSc and PhD candidates and early post doctoral researchers with interest on aerosol observations, technologies, impacts and applications

Register

Live Stream

Programme

GRASP Summer School and Workshop

The workshop aims to provide a framework for revision of advancements and perspectives in aerosol, clouds and Earth's surface observations, retrievals and modeling for climate and environmental studies.
It will focus on space- and ground-based remote sensing, aerosol circulation modeling, in situ observations and measurement synergy approaches. The workshop will include 15 minutes oral presentations and posters.
The sessions will cover the topics such as:
Inversion algorithms – achievements and new ideas to derive aerosol, clouds and surface properties
Achievements in aerosol, clouds and surface characterization
Modeling and inverse modeling of aerosol and clouds climatic effects
Measurements synergy approaches
In-situ observations and field campaigns
Future missions

More Details

FRC-V results

The Fifth Filter Radiometer Comparison (FRC-V) was held at the premises of PMOD/WRC, Davos, Switzerland from September 27th to October 25th, 2021. The objective of this campaign was to compare aerosol optical depth and Ångström exponents (AE) derived from different instruments belonging to different global, regional or national networks in order to quantify the main factors that are responsible for possible deviations. The aim of the whole activity was to initiate action towards homogenization of the AOD measurements on a global scale. The comparison protocol was formulated according to the WMO recommendations. Measurements of each instrument were compared to the WORCC Precision Filter Radiometer (PFR) reference triad.

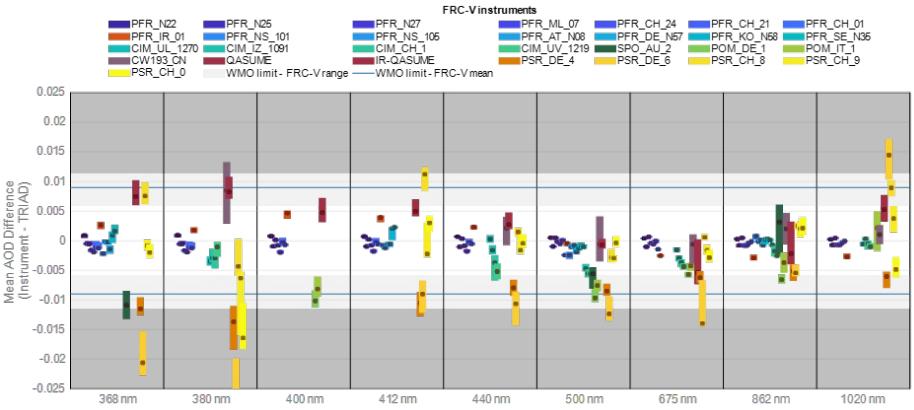

Figure: Average difference of each instrument compared with the PFR triad. All wavelengths not matching the 4 PFR wavelengths have been retrieved for the PFRs based on the AODs and AEs calculated from the PFRs. 10th and 90th percentiles are also shown as vertical bars. WMO limits (averages based on the relative air masses during the measurement period) are shown as blue lines.

A total number of 32 instruments participated in the FRC-V. Concerning the comparison of all instruments with the PFR triad and the WMO limits: Here we define W1 as the case that at least 68% and W2 the case that at least 95% of the comparison data of each of the instruments at a certain wavelength and the PFR reference triad, are within the WMO limits. Based on table 5 for the UV range at least 68% of total instruments achieved to fulfil the W1 and also W2. For AODs from 400nm up to 1020nm 82% and 88% instruments achieved to fulfil the W1 and W2 respectively. 27 out of 30 instruments for AOD at 500 nm and 30 out of 30 for AOD at 862 nm achieved the W2 criterion.
It is suggested that mainly: calibration homogenization, improvements in pointing, homogenization of inputs used in the AOD retrieval algorithm (common set of ozone cross sections, NO2 optical depth determination, air mass calculation and Rayleigh scattering formulas), improvement in each instrument characterization, could lead to an improvement of the reported agreement.
In the following table we present the comparison of these statistics with

those obtained at the 4th filter radiometer intercomparison (WMO, 2018).

Table Comparison of results from the FRC-IV and FRC-V (number of instruments of the total satisfying the U95 limit).

Wavelength (nm)	368/380	402/412/440	500	675	862/870	1024
FRC 4	16/24	16/24	27/29		25/29	
FRC 5	22/30	25/30	27/30	19/21	30/30	17/20

Do you have any news/activities that could be shared in HARMONIA newsletter? Don't hesitate to send the relevant information at harmonia@harmonia-cost.eu or contact us at social medua

HARMONIA

COST action

COST (European Cooperation in Science and Technology) is a funding agency for research and innovation networks. Our Actions help connect research initiatives across Europe and enable scientists to grow their ideas by sharing them with their peers. This boosts their research, career and innovation.