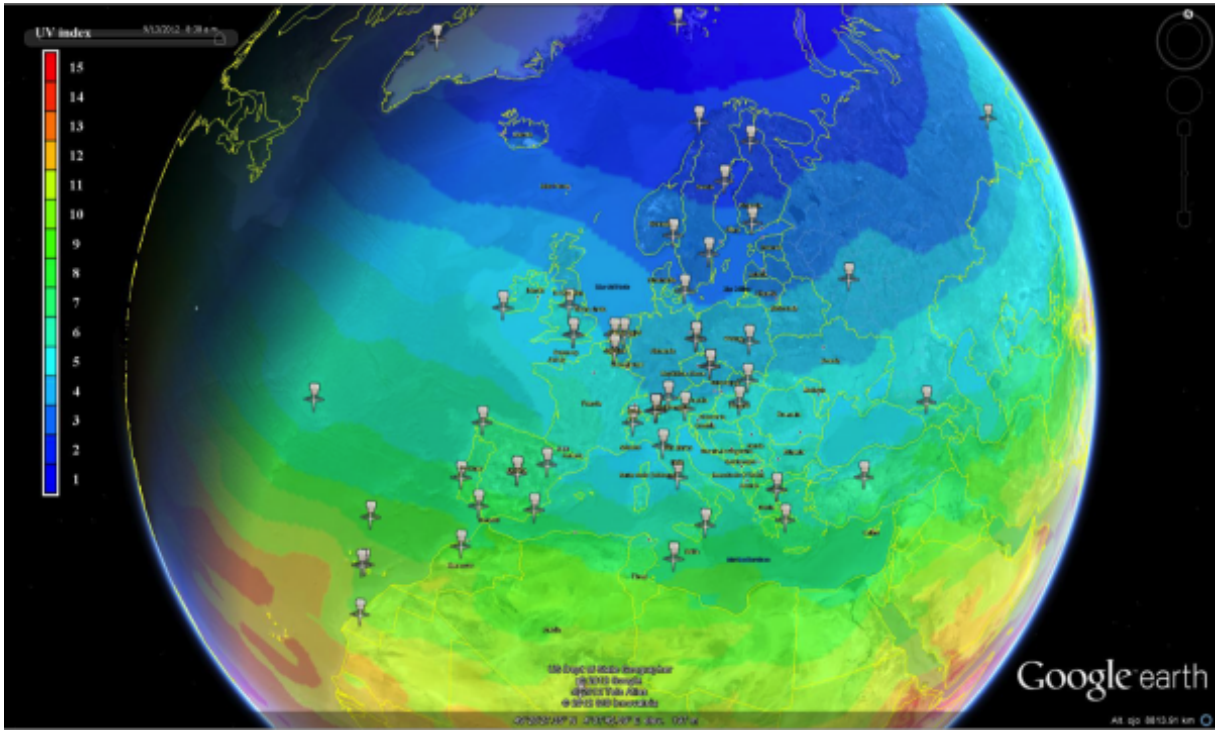
Aerosols validation using EUBREWNET

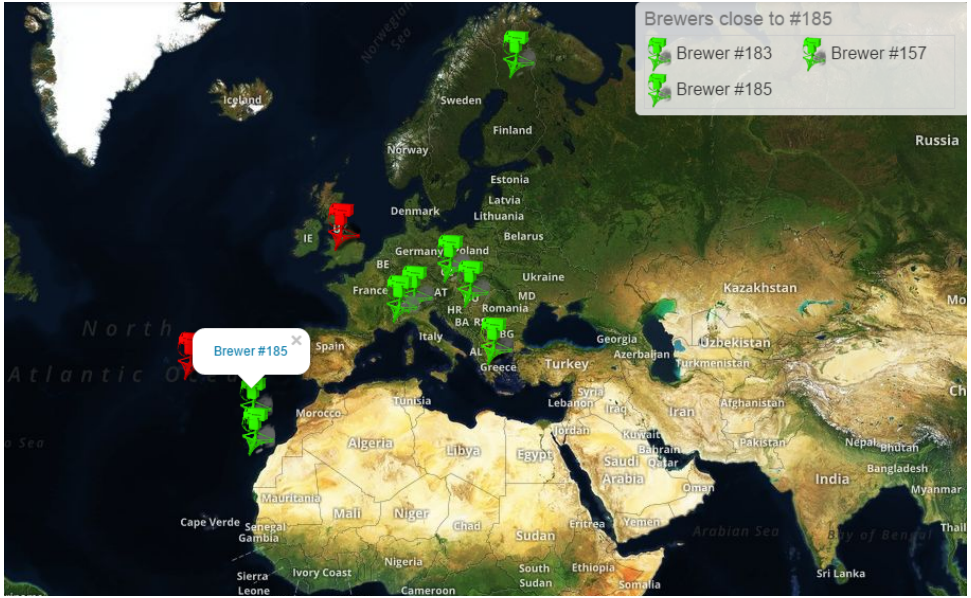


A EUropean BREWer NETwork - EUBREWNET
ESSEM COST Action ES1207

Centralized processing of Brewer observations (O3, spectral UV, SO2 and AOD)

Calibration Centers
(RBCC-E & PMOD-WRC)

50 stations from Europe and North Africa
+Canada + USA +Australia ….



AEROSOL from Brewer Instrument

Aerosol Optical Depth measurements at 340 nm with a Brewer spectrophotometer and comparison with Cimel sunphotometer observations at Uccle, Belgium

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Royal Meteorological Institute of Belgium, Ringlaan 3, 1180 Brussels, Belgium

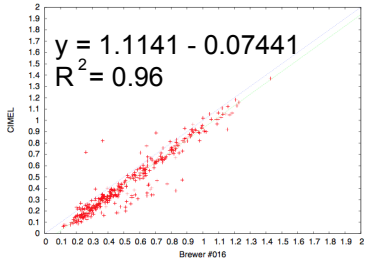


Fig. 2. 373 AODs from CIMEL at 340 nm shifted to 320 nm versus the AODs from Brewer #016 at Uccle in Belgium since April 2006 to 2007. The green and the blue lines represent the equation f(x)=x and the absolute linear regression line for the data, respectively. The correlation coefficient, the slope and the intercept are 0.96, 1.0041±0.0183, −0.0744±−0.0122, respectively.

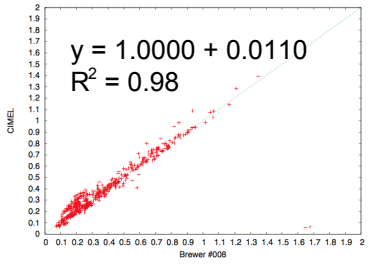
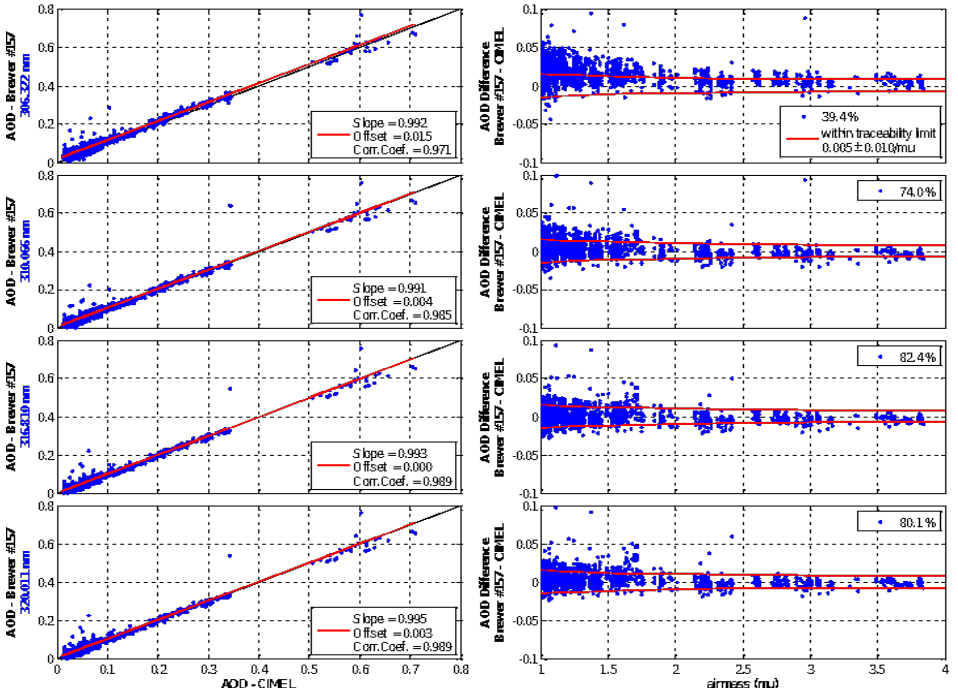


Fig. 3. 550 AODs from CIMEL at 340 nm shifted to 320 nm versus the AODs from Brewer #008 at Toronto in Canada since 1996 to 2006. The green and the blue lines represent the equation f(x)=x and the absolute linear regression line for the data, respectively. The correlation coefficient, the slope and the intercept are 0.90, 0.9943±0.0188, 0.0128±0.0060, respectively. These parameters are clearly improved without considering the 2 outliers (0.98; 1.0000±0.0176; 0.0110±0.0056).

CIMEL(AERONET) - BREWER #157 RBCC-E (AEMET)

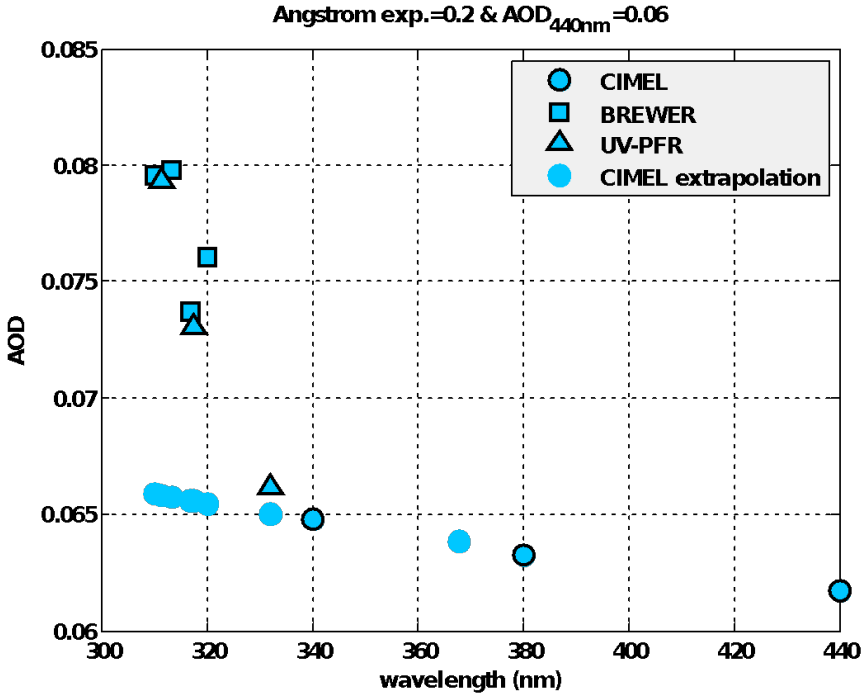


Instruments

Brewer #157 & #185 (Traveling Standard) - Double Monochromators
303.2 nm, 306.3 nm, 310.0 nm, 313.5 nm, and 320.0 nm
FOV ~2º

UV-PFR (002) - Filter radiometer
305 nm, 311 nm, 317 nm and 332 nm
FOV ~2.5º

CIMEL-AERONET - Filter radiometer
340 nm, 380 nm, 440 nm, …
FOV ~1.5º



TRACEABILITY OF AEROSOL MEASUREMENTS

1. Langley Calibrations at Izaña are transferred to network Brewers during RBCC-E campaigns.

2. A travelling instrument (PSR , UV PFR) from PMOD-WRC transfers the calibrations between campaigns.

3. Lamp setups are used to transfer the calibration at the stations.

NEXT STEPS

- APRIL 2015: PSR /Brewer comparison at Izaña
- JUNE 2015: RBCC-E campaign (PSR/Brewer and network instruments)
- JUNE 2015: Real time AOD product.
- 2015-2016: ESA funded project will support the AOD calibration during RBCC-E campaigns and OMI validation.

Funded !

Implement NRT EUBREWNET into COPERNICUS' model validation activities