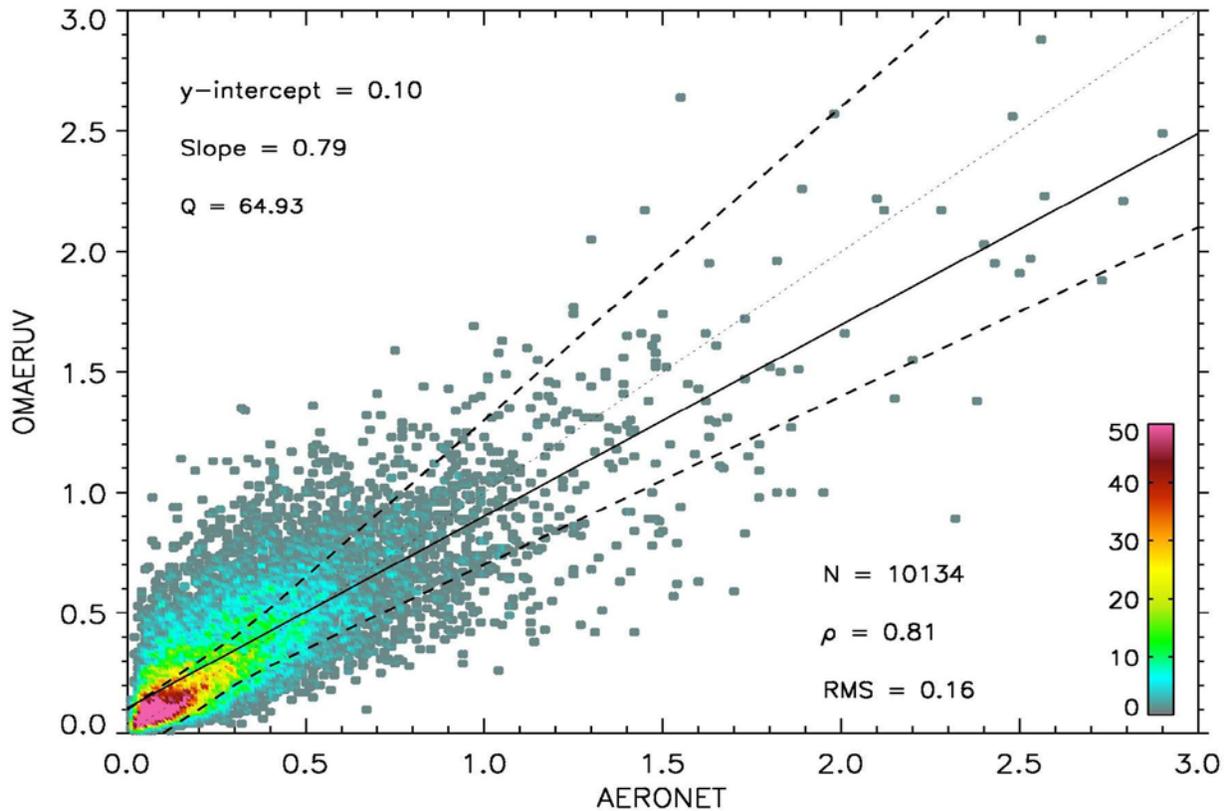


## OMAERUV ASSESSMENT SUMMARY

The accuracy of OMAERUV retrieved aerosol optical depth and single scattering albedo (388 nm) has been assessed by direct comparison to independent ground based observations by the AEROSOL ROBOTIC NETWORK (AERONET) at multiple sites around the world.

### AOD VALIDATION

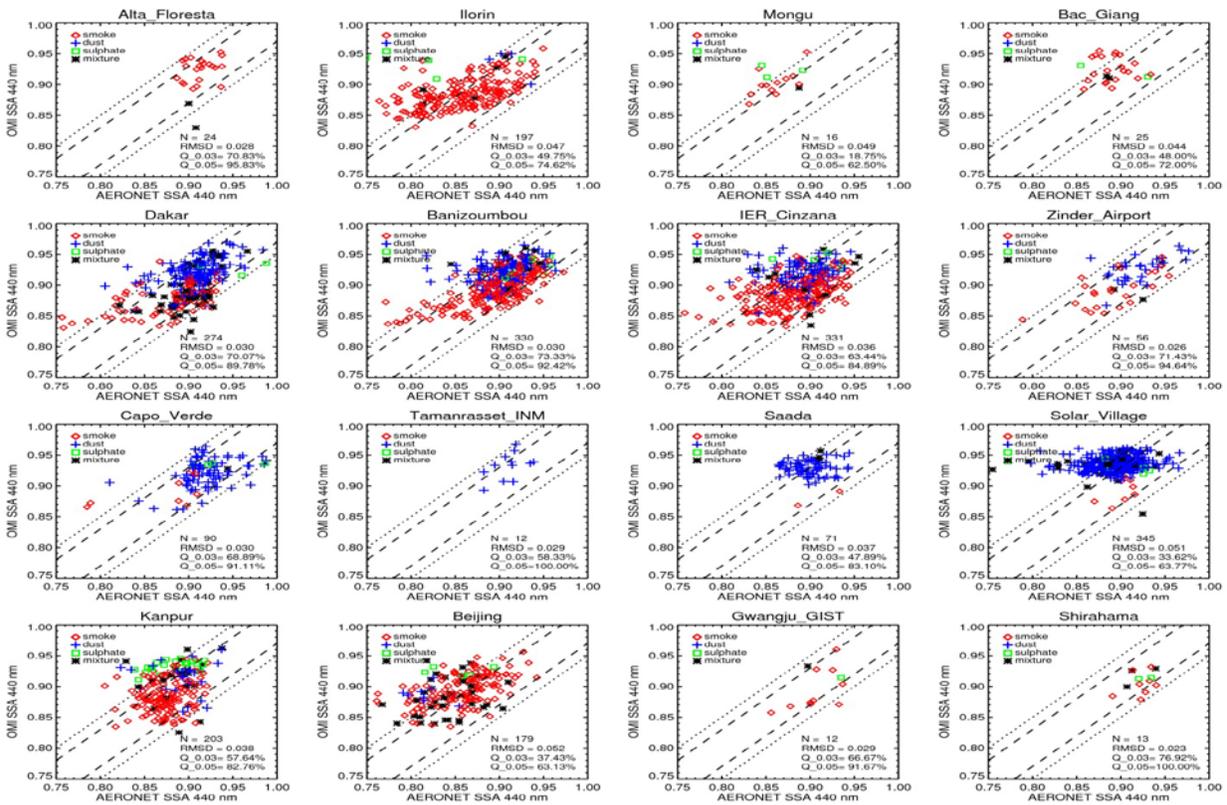
Multi-year (2005-2008) OMAERUV AOD retrievals were compared to collocated AERONET measurements at 47 sites around the world [Ahn et al, 2014]. The analysis of over 10,000 matched pairs yield a correlation coefficient of 0.81, slope of 0.79, and a 0.1 y-intercept. The validation analysis indicates that 65% of the evaluated AOD data agrees with AERONET observations within (the largest of) 0.1 or 30%.



### SSA EVALUATION

Because of the unavailability of ground-truth measurements of atmospheric-column-equivalent single scattering albedo, an actual validation of OMAERUV derived SSA is not currently possible. Thus, the OMI SSA product has been compared to independent AERONET retrievals obtained by inverting ground-based measurements of sky-radiances [Dubovik et al, 2002] to evaluate the level of consistency of the two retrievals.

OMAERUV SSA retrievals over the period 2005-2012 were compared to AERONET retrievals at all AERONET sites [Jethva et al, 2014]. After accounting for the wavelength difference (AERONET's 440 nm and OMAERUV's 388 nm), it was found that 51% of the matched pairs agree within 0.03 whereas 75% agree within 0.05.



## References

- Ahn, C., O. Torres, and H. Jethva (2014), Assessment of OMI near-UV aerosol optical depth over land, *J. Geophys. Res. Atmos.*, 119, 2457–2473, doi:[10.1002/2013JD020188](https://doi.org/10.1002/2013JD020188).
- Jethva, H., O. Torres, and C. Ahn (2014), Global assessment of OMI aerosol single-scattering albedo using ground-based AERONET inversion, *J. Geophys. Res. Atmos.*, 119, doi:[10.1002/2014JD021672](https://doi.org/10.1002/2014JD021672).
- Torres, O., Ahn, C., and Chen, Z.: Improvements to the OMI near UV aerosol algorithm using A-train CALIOP and AIRS observations, *Atmos. Meas. Tech.*, 6, 5621-5652, doi:[10.5194/amtd-6-5621-2013](https://doi.org/10.5194/amtd-6-5621-2013), 2013.