

Comparing MAIAC and MISR Surface Bidirectional Reflectance Factors: Implications for MAIA Aerosol Retrievals

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NASA's MAIA (Multi-Angle Imager for Aerosols [1]) investigation will seek to understand how different types of aerosols affect human health. To better constrain MAIA's aerosol retrieval, we have developed an interface to incorporate the a priori of surface reflection from the MAIAC (Multi-Angle Implementation of Atmospheric Correction [3]) dataset. To assess the consistency in modeling surface reflection, MAIAC surface climatology is compared to MISR (Multi-angle Imaging SpectroRadiometer [2]) surface bidirectional reflectance factors for a variety of surface types. We have compared the surface albedo, spectral invariance and spatial variability of surface directional reflectance distribution function of the two datasets. An algorithm has been developed to convert MAIAC's Ross-Li [4] surface model parameters into Rahman-Pinty-Verstraete model [5] parameters adopted by MAIA's coupled atmosphere-surface retrieval. Benefits of using surface a priori constraints are examined using multi-angle and multi-spectral radiometric data from MISR as well as polarimetric data from the SPEXone instrument [6] aboard NASA's PACE mission.

References

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