

This paper represents an attempt to characterize the trans-Pacific aerosol transport from Asian sources. The manuscript describes the combined use of multiple sensors (on both LEO and GEO platforms) to document the temporal and spatial variability of Asian aerosols as they are mobilized across the Pacific Ocean. As indicated by the authors the main difficulty in this analysis is the persistent presence of cloud layers. Aerosols are frequently mixed with and often located above clouds and, therefore, the separation of the aerosol signal from the significantly brighter background poses a big challenge in satellite-based remote sensing. The paper is generally well written and appropriate for publication in AMT after the authors address the following issues.

In the discussion on the difficulties of dealing with aerosols above clouds, the authors seem unaware of recent progress in the development of retrieval approaches to precisely detect and measure aerosols above clouds using POLDER [Waquet et al., 2009], OMI [Torres et al., 2012], and MODIS [Jethva et al., 2013; Meyer et al., 2015]. These three instruments have been in operation for ten years or longer. The authors do not make any mention of these capabilities and any available products from these sensors applicable to their analysis.

Much of the trans-Pacific aerosol transport is actually desert dust from sources in the Gobi and Taklamakan deserts. The importance of taking into account the asphericity of desert dust aerosols in remote sensing is well documented. Is this effect properly accounted for in the MODIS and VIIRS algorithms, and in the algorithm developed by the authors for the geostationary IMAGER sensors? If not, why not? Please discuss the rationale.

Are the aerosol models used by the MODIS and VIIRS algorithms consistent with each other? The discussion regarding the choice of aerosol models for use in the IMAGER sensor algorithms indicates no effort to make them consistent with the ones used by the LEO sensors. The difference in aerosol model representation can result in non-negligible difference in retrieved aerosol optical depth. Please discuss this issue in the manuscript.

In the discussion of the GEO observing capabilities, the authors repeatedly refer to GOES or MTSAT reflectances. GOES and MTSAT are the platforms, not the sensors. The actual name of the sensors in both satellites is IMAGER, so please refer to them correctly.