

Interactive comment on “Validating MODIS Above-cloud Aerosol Optical Depth Retrieved from “Color Ratio” Algorithm using Direct Measurements made by NASA’s Airborne AATS and 4STAR Sensors” by Hiren Jethva et al.

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This paper by Jethva et al. compares satellite retrieved aerosol optical depth above clouds with aircraft observations. The authors used Color Ratio method developed by the same group (Torres et al., 2012 and Jethva et al., 2013) for retrieving aerosol optical depth over clouds. Recently, there was a nice effort of inter-comparison of retrieved aerosol optical depth above clouds using multiple-independent methods utilizing passive and active satellites (CALIPSO, OMI, POLDER and MODIS), the comparison among these satellites were very encouraging. So far none of the above cloud

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aerosol products from these satellites are cross checked with aircraft or other ‘known’ observations. Validation of MODIS based CR method using aircraft observations in this study provide additional confidence on the reliability of these new products and very useful for the atmospheric science and climate research. This work demonstrated a potential to deliver new products which are not possible with traditional methods. It also gives a confidence in use of passive satellite observations in presence of clouds. In addition, this paper will also motivate and useful for upcoming campaigns like OR-ACLES and CLARIFY over Africa and its adjoining Atlantic Ocean where the aerosol over the low level clouds are very common in August and September months. Overall the manuscript is well written, introduction is set to nice stage, results are new, conclusive and important and relevant to AMT. I strongly recommend the MS for publication.

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