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Interactive comment on “A method to retrieve super-thin cloud optical depth over ocean background with polarized sunlight” by W. Sun et al.

Anonymous Referee #2

Received and published: 13 September 2015

This work addresses a retrieval method of the optical depth of super-thin oceanic clouds using polarization as a theoretical study. This sort of cloud is quite difficult for detection with conventional passive sensors, but the authors had developed a detection method for the clouds using polarization in the previous study, and further proposed a retrieval method.

Overall, this paper is well-written and the reviewer recommends the publication after solving the following points.

Specific points: The reviewer wonders how large the retrieval error would be. Could

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the authors give any sensitivity study within realistic ranges of calibration for PARASOL data?

Could the authors give any validation results using, for example, CALIOP and so on? Is it out of the scope?

Typographical points: Line 7, Page 21963: 'term' should be 'terms'?

Lines 8 and 9, Page 21969: If two descriptions of Sun et al. (2014) are the same, how about combining them into one 'Sun et al. (2014)'?

Interactive comment on Atmos. Chem. Phys. Discuss., 15, 21959, 2015.

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