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Interactive comment on "A new algorithm for detecting cloud height using OMPS/LP measurements" _by_ Z. Chen et al.

Anonymous Referee #1

Received and published: 30 October 2015

This paper develops and demonstrates a new, simple and useful approach to the detection of cloud tops in spectral limb scattered radiance profiles obtained by the OMPS-LP instrument on SNPP. The validity is demonstrated with a systematic comparison with CALIPSO. This technique is useful and should be published after the following minor comments are addressed:

10162: The introduction/use of lnR is confusing; the development in equations 2-4 should be clarified.

10161: Water clouds? What about ice, i.e. cirrus? Isn't cirrus the most important cloud type here? 10166: What about the bias that will arise due to patchy clouds in the near and far sides of the tangent point?

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Figure 7: The red curve is not a Gaussian (the high tail on the low value side of the peak). Please clarify/explain.

General comment: What about the change of scattering angle with latitude? This affects the "contrast" between cloud, aerosol and the Rayleigh background. Does the threshold possibly need to change with scattering angle?

Interactive comment on Atmos. Meas. Tech. Discuss., 8, 10159, 2015.