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Atmospheric Measurement Techniques Discussions

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

**Anonymous Referee #1**

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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?



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?

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