

Interactive comment on “Global statistics of liquid water content and effective number density of water clouds over ocean derived from combined CALIPSO and MODIS measurements” by Y. Hu et al.

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Received and published: 21 May 2007

In the introduction: 1) Maybe a small explanation how lidars work and what kind of passive remote sensing they will talk about. 2) Need a few preliminary definitions: integrated depolarization ratios etc. 3) Why is multiple scattering not dependent upon variance in droplet size distribution? Can you really say that in all clouds that multiple scattering ~ single scattering? 4) Line 16: 'as it is less ambiguous ...' than what?? 5) What is DMS? 6) An overview of the instruments used is needed as well.

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In the 'A simple and reliable technique ...' section: 1) How is the water cloud extinction coefficient related to the depolarization ratio of integrated lidar backscattering measurements? Do you have a formula that you use?? 2) What is the 'Gamma droplet size distribution'?? 3) Dimensional analysis on Eq.1 seems as if the extinction coefficient beta is dimensionless?? 4) Line 3 on pg.4069: 'Re0 = 1micrometer.' is NOT a sentence. 5) Figure 5 appears before Figure 4. 6) Figure 4 is not explained in the text. 7) Eq.3: This cannot be an equation if the right hand side is the left hand side divided by 1000. Where does $2 \rightarrow 0.002$ come from?? Is it just redefining LWC from SI units (kg/m^3) to g/m^3 ? Again, dimensionally confusing. 8) Can we see a plot showing the agreement between your LWC and the 'various historical in situ measurements'? 9) Why do you choose a generalized gamma distribution? 10) Line 11 on pg.4071 is the first mention of CCN - and you haven't defined the acronym nor lead up to the mention of it or why it is important. 11) Same comment as 10) about the sulfur cycle and biogeochemistry stuff. How is this related to the initial goals of your project?? 12) Reference for Shaw (1983) given on line 9 of pg.4073 - the only reference for Shaw given is from 1987.

Overall: This paper cannot be understood on its own, so is only of interest to a small group of readers. It should be rewritten for a broader community, otherwise it's just a technical note. As well, the level of english in this paper falls short of the ACPD standard.

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 4065, 2007.

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