1	Res	ponse to Interactive comment on "A comparison of
2	ship	and satellite measurements of cloud properties in the
3	sou	theast Pacific stratus deck" by Anonymous Referee
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14 15 16 17 18 19 20	G1. G2.	The important point of this manuscript is not necessarily that CloudSat LWP cannot be used for model evaluation, but how such measurements can be used for such a purpose. This will be better explained in the revised manuscript by the additional lines and corresponding descriptions in the text. We will include an extra line in Figures 2-4 of "precipitation-free" CloudSat LWP. We will also add a table detailing the statistics of various Z_{max} criterion (not just -18 dBZ).
21 22 23 24 25 26 27 28 29	G3.	A bigger discussion of CAM3.1 was avoided, because it was essentially out-of-date with the partial release of CAM3.5 and the soon-to-be-released (at the time) CAM4. With the recent release of CAM4, we can now include a proper discussion of the model results comparing the new version with the previous version. We will also be more careful to point out how we define model definitions of cloud top and bottom. Unfortunately, these quantities are not outputted by the model, and the only way to define this is to take cloud bottom as the bottom of the lowest layer with cloud fraction > 0 and to take cloud top as the bottom of the layer where cloud fraction goes back to 0 above the bottom. A higher critical value could have been used, but such a choice

would've been purely arbitrary. We will highlight how this definition differs from
what is obtained in the satellite and ship retrievals and point this discrepancy as a
source of model improvement (e.g., an increase in vertical resolution to be able to
resolve such clouds). Therefore, there is merit in including such a comparison in this
manuscript.

- 6 S1. The cloud top IQRs from CALIPSO are a little bit higher than those of the ship
 7 observations, so sampling variability may play a small role in describing the higher
 8 diurnal cycle here.
- 9 S2. We will add a better description of how the CloudSat profiles were averaged into the 10 $0.25^{\circ} \times 0.25^{\circ}$ grid boxes to compare with the AMSR-E and SSM/I LWPs in Figure 1. 11 While this isn't "perfect," this is the best way that we can think of to do such a 12 We also recognize that the CloudSat profiles were not originally comparison. 13 screened properly to account for the differences between the satellite retrievals, and 14 we will do a better job at this in the revised manuscript (see #1 in the Response to Z. 15 Wang). For Figures 2 and 4, the only condition applied was that CloudSat LWP had 16 to be non-zero. No conditions were applied to the model results or ship observations. 17 This will be explained in the revised manuscript.
- 18 S3. Figure 1a will be changed to plot a scatter plot of AMSR-E and SSM/I LWP vs.
 19 CloudSat LWP behind the median LWPs for both in 100 g m⁻² bins of CloudSat LWP.
- 20 S4. We will add the cruise data to the histogram.
- S5. We will add AMSR-E and SSM/I to Figures 2 and 4. With this addition, we will
 relabel the identification of the CloudSat team's products in the legend of these
 figures.