Major comments

It is a great idea to compare the cloud observations from spaceborne CALIPSO and airborne measurement. As the authors stated in introduction, a systematic evaluation of the CALIPSO data set is desirable. But the abstract fails to clarify the important comparison results. "Cloud top heights vary with altitude" is common sense.

Introduction is of clarifying the scientific or practical necessaries, not a pile of references. The introduction in the manuscript is not well organized and cannot reflect the importance of this study. I suggest the authors reorganize and rewrite the introduction with a focus on what this study can contribute.

1. I cannot get the main idea of the manuscript from the title. What doses "nature" in the title stand for? The title should be revised to properly summarize the manuscript.

2. The structure of the introduction is not clear. For example, the first two paragraphs are just a list of references without a clear conclusion from them or logical structure. What do the authors want to say with those two paragraphs?

3. The manuscript strongly suffers from its poor written English and fails to efficiently deliver information. I just list some of the grammar errors and improper expressions in minor comments, but the authors need to thoroughly rewrite the manuscript.

4. The section discussion is unnecessary. It discusses some details of previous sections. It is better to recognize them into their corresponding sections.

I am interested to this topic, and this study is important for the CALIPSO applications for the scientific community. According to the above concerns, however, I suggest the authors thoroughly rewrite the manuscript and resubmit.

Minor comments:

1. Erroneous English grammars and expressions

   a. The abbreviations must be defined before using them in abstract.

   b. The paragraph in section 2.1 is too long to follow.

   c. Page 1 lines 6-8: "The study concentrates on the comparison and investigation of detected cloud top height distributions derived from measured WALES and CALIOP lidar profiles by *use* of a newly developed cloud detection algorithm."

d. Page 2 lines 1-3: Not clear.

e. Page 2 lines 15-22: What does "footprint" mean? Resolution?

f. Page 2 lines 28-31: Delete "We therefore … system CALIOP".

g. Page 5 line 1: "For the this study" ?

h. Page 6 lines 19-20, 24, and 27-30. I cannot understand.

i. Please use comma when necessary. Please see page 8, lines 12-14; page 9, lines 8-9; page 15, line 5, …

j. Page 6 line 24. What does "stayed constant" mean?

k. Page 6 lines 26-28: … form about 18 to about 10 N … ?

l. Page 13 line 14: "Comparing" -> comparing with. Please fix this error throughout the text.

2. The reference styles are not consistent (Page 16).

3. Please add labels for Figure 3.

4. The calculation of cloud and cloudiness lengths is common practice, so the equation and its related description are not necessary.