Review of "An important mechanism sustaining the atmospheric "water tower" over the Tibetan Plateau" by Xu et al.

General comments

This paper uses NCEP/NCAR reanalysis datasets to understand the hydrological cycle over the Tibetan Plateau. The authors show that plateau's thermal structure leads to the formation of two CISK type systems, characterized by lower level convergence and upper level divergence, which ladders the moist air up to the plateau. The analysis is sound and the results are well presented. I only have few minor concerns. Overall, I recommend the paper for publication in ACP after the authors address following comments.

Specific comments

Page 18259, Line 8: What are the longitude bounds for the region you considered for regional mean?

Page 18260, Lines 14-18: You say that frequency of occurrence of cumulonimbus clouds is 2.5 times the regional mean. Can you clarify which region are you referring to? Figure 6 shows that cloud fraction is much higher over southern slopes of Tibetan plateau. Given this, why should cloud fraction be higher over the Tibetan plateau?

Page 18260, Line 17: You mention Fig. 6 before Figs. 3-5. I would recommend rearranging figures based on the flow of text.

Page 18260, Line 26-28: Can you please elaborate how elevated wet island prevents mixing of tropical air with the extra-tropical air?

Page 18261, Line 11-16: This is a very long sentence. Please consider breaking the sentence into smaller sentences. It is also not clear what you mean here by saying "correlation of Q1 with divergence in contours". The caption of Figure 3 mentions "daily correlation". Do you average daily correlations to construct middle panel of Figure 3?

Page 18261, Line 20: Change "and also" to "but also"

Page 18264, Line 6: Change "Bengal Bay" to "Bay of Bengal".

Figure 2: You say that zonal means are calculated along 93^{o}-94^{o} E. However, NCEP/NCAR reanalysis datasets are available at 2.5^{o} resolution? How do you go from 2.5^{o} to 1^{o} for constructing zonal means?

Figure 3: What do you mean by "correction vectors"?