Reviewer #1 Evaluations:

Science Category: Science Category 2

Presentation Category: Presentation Category A

Reviewer #1 (Comments to Author):

This manuscript investigated the relationship between the Meiyu and tropospheric jet anomalies on a climatological timescale. Ideas are clear and well presented. However, the causality implied in the manuscript that changes in both Pre- and Post- Meiyu rainfall are caused by East Asian tropospheric jet is not too much persuasive, instead, it can be simply a local response (e.g., Zhang, Y., X. Kuang, W. Guo, and T. Zhou (2006), Seasonal evolution of the upper-tropospheric westerly jet core over East Asia, Geophys. Res. Lett., 33(11), L11708, doi:10.1029/2006GL026377). I am curious about how authors can link the East Asian tropospheric jet anomalies to changes of the larger-scale subtropical westerly jet. In addition, the relationship shown in Fig. 5 b,c seems to me not significant, and previous study (Fig. 3f in Chen and Bordoni 2014: Intermodel spread of East Asian summer monsoon simulations in CMIP5) shows that simulated rainfall and jet speed over East China don't have a

significant relationship on an inter-model scale.

1. A couple of pieces of information in Fig. 1 are left unexplained, such as Tilt and length. What does mean intensity refer to? Rainfall rate as in a) or rainfall rate within the rainfall band? Is the frequency in c) one part of that in b)? If yes, how come it is smaller than that in b?

2. (lines 153-154) Is it due to changes in intensity (criterion of 10 mm/day) or spatial expansion (5 degrees of longitude)?

3. (line 160) I don't really get it how both primary and secondary rainfall bands are ASSOCIATED with the jet using Fig. 5c. In addition, colors in the histograms are not described, and significance of the linear relationship is not fully disclosed.

4. (line 164) Are changes in the other months ignorable to yearly changes compared to that during the post-Meiyu season? I am curious whether there are any compensating effects in changes in precipitation during non-Meiyu periods.

5. (line 206) What about the relationship between rainfall intensity and jet stream?

6. (272) find --> found

7. Fig. 3 and 4. The statistics is performed on the climatological daily data, isn't it? If so, will interannual variability smooth out lots of your signal?

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Reviewer #2 Evaluations:

Science Category: Science Category 3

Presentation Category: Presentation Category A

Reviewer #2 (Comments to Author):

By using a long-term catalog of frontal rainbands over eastern China, this study investigates the climatology and variability of frontal rainfall in recent decades. The relationship between Meiyu front and large scale circulation is also discussed. Some methods, such as the rainband detection algorithm, are interesting, and certain positive results have been achieved. However, this study suffers from a major flaw that new method and new point of view bring no significant improvements in understanding of the "south flood north drought" phenomenon. I therefore recommend a major revision. Detailed comments are listed as below:

1. The analysis based on the frequency of rainband is highly consistent with previous studies using station observed rainfall amount. This is easy to understand since most of rainfall over East Asia comes from frontal systems. Therefore, the merit of the new catalog of frontal rainbands is not explicitly presented. A suggestion is that the decadal changes in features of rainband, such as its tilt and length shown in Fig.1d, should be analyzed to enrich the knowledge of rainfall changes over the target region.

2. One major conclusion of this study is that the annual and decadal variability in Meiyu front is accompanied by changes in the tropospheric jet. This point has been investigated extensively and it is well accepted. More solid evidence for mechanisms rather than relationships are needed here.

3. A unified explanation for both Pre- and Post-Meiyu is another important point of this work. However, Yu and Zhou (2007) has established an overall model to describe the rainfall changes in all seasons, including the drought in late spring, the "south flood north drought" in midsummer, and even the "south drought north flood" in June, which is not discussed in this study.