The paper entitled ‘Evaluation and Application of Precipitable Water Vapor Product from MERSI-II onboard the Fengyun-3D Satellite by Wengang Zhang’. The obtained results are interesting to know more about the satellite based observations uncertainties on temporal, spatial (distance) & altitude based and try to improve them. The conventional observations are expensive and limited (twice in a day). Space based PWV have inherent uncertainties and need to be validated time to time basis before using its with corrected bias confidence. In that respect the present study have a high potential for publication after incorporation of the comments/suggestions as given below:

Line -106-7: Details about retrieval algorithm near-infrared Precipitable water vapor product from MERSI-II are missing and also give references.

Line-108: Which method was used to identify cloudless pixels?

Section2.2 : You have used Radiosonde & AERONET data as base for comparison with MERSI-II . But the Radiosonde & AERONET based data also associated with errors. Explain the possible sources of Radiosonde & AERONET errors in your analysis.

Line 163: the consistency between the existing AERONET PWV and AERONET PWV measurements in varioustemporal discrepancy intervals from 1 h to 6 h is analyzed. I do not understand the paragraphs.

Line 177-178: For the MERSI-Ⅱ, the spatial resolution at nadir is 1 km × 1 km for NIR bands, which are used for the retrieval of PWV. Therefore, we use the standard deviation (STD) of a box with 9×9 pixels to eliminate the invalid PWV measurement. In operation, we set a general principle that the STD of this selected box must be less than 0.25 cm and the value of the STD dividing the minimum within the selected box must be less than 1.
Why you have set the limit of <0.25 cm? Why you have not set 1 or 2sigma STD to check the data quality.
Line 172: Figure 1 Authors should recheck the caption.

And line 189-191: In processing, all the PWV retrievals derived from MERSI-II within ±6 h of radiosonde release time are all collected and the closest PWV retrieval of MERSI-II within 100 km distanced from the IGRA site is selected and matched up with IGRA PWV.

I could not catch the match up criteria applied by authors. Explain whether any interpolation technique used to interpolate the data from 1x1 Km to 100 Km.

Line 200-208: There is a lack of discussion about meteorological / physical interpretation in cause of High & Low PWV centers. Around the tropics with latitude between 20°S and 20°N, the greatest PWV values are found with most PWV values above 2.17 cm. Lower PWV values are presented in mid-latitude, but the variability of PWV is the largest here with the values range from 0.60 cm to 2.17 cm. The PWV values in high latitudes are the lowest and most sites have the PWV values below 1.44 cm.

Line 217-218: Give reference.

Line 230-232: The radiosonde ascents drift and vertical extent will be different over different geographical domains. Similarly, the collocations matchups of clear sky pixel retrievals will vary and hence the MB and MRB values also vary latitudinal.

Line 256-257: Why low CC values that smaller than 0.8213 are predominantly concentrated around the equator. Give some reasons.

Line 267: Give references.

Line 269-270: Whether RMSE values are higher under the wet conditions [summer (JJA), autumn (SON)] than under dry conditions [spring (MAM) and winter (DJF)].

Line280-281: Give explanation regarding underestimation of MERSI-II PWV with respect to IGRA PWV for all the months in the northern as well Southern Hemisphere.

Line 286-287: Why the RMSE in the Northern Hemisphere is slightly smaller than that in the Southern Hemisphere. Give some possible reasons.

Line 333: Rephrase the sentence.

Line 348-350: the influence of haze is hardly corrected completely in the MERSI-II PWV retrieval algorithm. There is a high correlation between MERSI-II PWV and IGRA PWV, and the CC value is all above 0.8950. and the comparison of altitudes within 100-200 m presents a better performance.

Whether influence of haze correction is applied in retrieval of MERSI-II PWV? Please clarify and improve the discussion.

Line 356-367 Authors should mention values of MB and MRB.

Line 388-391: However, the trends of PWV at the two sites are similar, and there are nearly identical PWV mean values for both sites. Besides, the annual variation of PWV shows that the PWV of Motuo site is obviously higher than that of Shimian in July, which means that the PWV transport of the Brahmaputra Grand Canyon is more significant at this moment.

It is not look like trend; It should be warm and seasonal variations of PWV. In the month of July, movement of monsoon trough towards foothill of Himalaya may increase the value of PWV. Whether Shimian site is located leeward side?

Line 440:446: Finally, the PWV product derived from MERSI-II is employed to analyze the PWV distribution over QTP. In Both warm and cold seasons, the large PWV is concentrated in the Bay of Bengal, and the values are above 4.0 cm and 2.0 cm, respectively. As the distribution of PWV shows in clear sky condition, the water vapor transport path along the Brahmaputra Grand Canyon is obviously with a large PWV. What's more, the comparison between the monthly variations of PWV at Motuo and Shimian sites suggests that the two stations both enjoy the nearly identical PWV mean values. In terms of the altitudes of the two stations, the results indicate that the Brahmaputra Grand Canyon plays a key role in the transport of water vapor, especially in July. It is a simple comparison of two stations in respect of warm and cold seasonal variations of PWV. It is advised to do further case study combining the specific synoptic patterns (such as the background circulation, the thermodynamic conditions, etc.).