This paper entitled 'Inter-comparison of retrievals of Integrated Precipitable Water vapor (IPW) made by INSAT-3DR' satellite-borne Infrared Radiometer Sounding and CAMS reanalysis data with ground-based Indian GNNSS data' deals with the validation of INSAT-3DR and CAMS water vapor products using as reference GPS retrievals in India. To date there plenty of papers dealing with the validation of satellite and global reanalysis models IPW. But this paper is of interest to scientific community because INSAT-3DR is a geostationary satellite that allow continuous monitoring of IPW in Indian sub-continent. Also, the results presented here serve to validate CAMS reanalysis model. Having both INSAT-3DR and CAMS high precision data is of great importance for numerical weather predictions (NWP). Thus, I consider that the study is of interest and publishable in Atmospheric Measurement Techniques. However, I consider that the manuscript needs to be further improved before its final publication.

MAJOR REVISIONS:

1. The authors remark in the introduction (Lines 73-76) and in the results sections the importance of evaluating INSAT-3DR and CAMS over Oceans. Obviously, they do not have GPS measurements in remote oceanic regions. However, Maritime Aerosol Network offers a publicly free database of IPWV over oceans that are unique for the validations of satellites and global models IPVW products. Including such data in your validations will provide a unique value to the manuscript. See the references Smirnov et al., (2004, 2011) and Perez-Ramirez et al., (2019).
2. The database used for the validation is short. Why not using more years? Or why not using AERONET data? Another possibility is to estimate IPWV from ground-based temperature and relative humidity in remote areas (see Falaiye et al., 2018)
3. There is a systematic lack of appropriate references in all the text. Appropriate references are needed to fulfill quality standard in Atmospheric Measurement Techniques publication. Some of the most important are:
    a. No discussion of other satellites that provide IPWV in the introduction (e.g. MODIS, SCIAMACHY, GOME-2, AIRS)
    b. No discussion of other global reanalysis models (e.g. MERRA-2, CFSR)
    c. No discussion of other ground-based techniques used for validation of IPWV (e.g. radiosondes, AERONET sun-photometry, microwave radiometry)
    d. No references to INSAT-3DR neither for instrument specifications nor for retrieval algorithm. Are data publicly available?
    e. No references for GNSS network and/or data. Are data publicly available?
    f. No references for CAMS model. The link where data were obtained is necessary.
    g. No comparisons of the results with other obtained in previous studies.

MINOR REVISONS

- Introduction section needs to be further improved and appropriately referenced.
- Line 37: Currently, remote sensing instrument cost has been reduced. Please rearrange
- Line 38: Give an appropriate discussion of remote sensing techniques with appropriate references.
- Line 43: IPWV was already defined
- Lines 43-44: What do you mean 'surface radiation is completely absorbed by atmospheric water vapor in its way to the satellite'? Not all energy is absorbed. It depends on wavelength and water vapor content.
- Lines 50-52: What are the advantages/disadvantages of geo-stationary satellites versus polar orbiting satellites? You need to discuss previous achievements by polar orbiting satellites
- Line 66: What do you mean 'much improved biases'?
- Line 67: there is a typo in the references
- Lines 73-76: Discussion about water vapor in oceanic areas need to be further improved. See Perez-Ramirez et al., (2019)
- Methodology section is not well structured:
    - Start with instrument and models (GNNS network, INSAT-3DR and CAMS). IPWV mathematical definition (Line 143) must be in the first instrument you talk about (e.g. in the GNNS network description)
    - Later continue with the description of statistic parameters
    - Finish the section with the matchups
- Lines 94-95: It is unnecessary the information about the software you used for statistics.
- Line 123: NWP acronym has not been defined
- Section 2.3 Scan strategy of INSAT-3DR sounder: There are no references, so it seems that is the first time that is presented. Is there any literature about that? If so the section is unnecessary, just provide appropriate references.
- Lines 176-177: I do not understand the limitation of 5º
- Section 2.6: It is not clear how do you make the matchups between GNNS and CAMS. Also, in section 3.3 you perform an inter-comparison of CAMS with INSAT-3DR. How do you make these matchups?
- Table 1: There is typo in the units of central wavelengths
- Table 5 and Table 6. Please add to the legends that they are statistical analyses of the intercomparisons.
- Figure 4: Which data are you using in the Figure?
- Lines 278-283: I do not understand the paragraphs. To me there is nothing related with the intercomparisons of IPWV
- Lines 289-292: To me the influence of GPS error in the differences between GPS and satellites is negligible. Please quantify the error and improve the discussion. Differences

in IPWV must associated with the differences in the sampling area and with limitations in satellite retrievals.

- Lines 293-296: Could satellite data be cloud-affected data?
- Lines 297-300: There is a miss of any proposal to improve data retrieval or data quality.
- Lines 348-351: Give references
- Lines 352-356: Give references
- Section 3.3 Inter-comparison of CAMS reanalysis and INSAT-3DR IPWV: I suggest a plot with the differences to quickly visualize the intercomparison
- Lines 389-391: Paragraph need to rearrange, I could not catch the main message
- There are lacks of discussions of Figure 7 and Figure 8 in the text.
- Section 3.4 need to be further improved, particularly about oceanic areas. Also, Figure 9 shows seasonal analyses not annual mean values.
- Conclusion section must be improved. Point number four is not demonstrated from the analyses and discussions in the manuscript. Point number five need to be revised because it cannot be understood.
- Finally, I recommend that a native English speaker revise the manuscript

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