

## ***Interactive comment on “The MUSICA MetOp/IASI H<sub>2</sub>O and $\delta$ D products: characterisation and long-term comparison to NDACC/FTIR data” by A. Wiegele et al.***

**Anonymous Referee #2**

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The paper investigates the water fractionation using the IASI satellite for three different locations, and compares the results with ground-based remote sensing data from the NDACC at the three locations. The water cycle is an extremely important part of the earth climate system. The water isotopes help to understand the water cycle in much more detail. Only very few studies have been performed using remote sensing data. This paper yields an interesting and new contribution to these studies.

Overall the paper presents interesting and new results, and is well written. I have only a few comments.

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The whole paper describes in detail the technique, how to derive the fractionation in the best way. This is good, and worth publishing. The only 'science' is in Fig. 9. Although AMT concentrates on the technique, a few words describing the meaning and importance of Figure 9 would be nice. This would enable the reader to understand why this detailed study is necessary for future studies of the water cycle.

All Figures need a more clear description in the panels and captions what is shown, indicating what is IASI, what in NDACC, what is H<sub>2</sub>O, dD etc.

Fig. 1: It is not so easy to understand what is shown in the panels. A better description and/or abbreviations in the panels are necessary.

The explanation of Fig. 6 in the text is confusing, and the relation to Fig. 4 is not clear.

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