

## ***Interactive comment on “Cross-validation of IASI/MetOp derived tropospheric $\delta D$ with TES and ground-based FTIR observations” by J.-L. Lacour et al.***

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The manuscript “Cross-validation of IASI/MetOp derived tropospheric dD with TES and ground-based FTIR observations” is suitable for AMT journal. The idea of inter-comparison of dD data from the different satellite instruments such as IASI and TES is novel and promising, but minor revisions are necessary.

Regarding chapter 4 “Comparison IASI vs. TES”:

1. It is necessary to show in the chapter of the article a picture (color map) of collocation the observation spots of IASI and TES and discuss estimation error of the

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inter-comparison due to spatial (up to 1 degree) mismatches and temporal (not less than 4 hours) differences.

2. It would be useful to add scatter plots of IASI-dD vs. TES-dD in the atmosphere (at different height) above ocean and above land separately and discuss impact of uncertainty of land surface emissivity on retrieval error and on the inter-comparison error.

3. Data of inter-comparison between TES-dD and IASI-dD obtained at large scale is one of main results of the article. To illustrate the result elegant, it would be useful to add a color map of the difference between IASI-dD and TES-dD data obtained above the Atlantic (from 60S to 60N and from 30 to 25W) and above the Indian and Pacific Oceans (from 15S to 10N and from 65 to 155E) both before bias correction and after the bias correction.

Technical comments

Fig. 6, it is necessary to add numbers on abscissa axis for g-i and j-l figures.

Fig. 11, JJA should be change to DJF at the blue box on the bottom, probably.

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