

***Interactive comment on “Thermal and near-infrared sensor for carbon observation Fourier-transform spectrometer-2 (TANSO-FTS-2) on the Greenhouse Gases Observing Satellite-2 (GOSAT-2) during its first year on orbit” by Hiroshi Suto et al.***

**Anonymous Referee #1**

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General Comments:

The authors have provided a very thorough description of the mission, instrument, and operations process. Both successes and challenges are presented. For several quantities that are listed, it was not always clear what the target/threshold performance level is, or what the consequence was when it was not achieved.

Specific Comments:

Line 84: why do the spectral ranges of the forward and backward channels of CAI-2 differ? Line 182: were CO<sub>2</sub> or CH<sub>4</sub> also detectable? Line 283: at what radiance levels does saturation occur? How often is the saturation flag set? Line 546: Instead of "slightly wider", quantify the typical difference in ILS width Table 5: why are separate wavenumbers listed for s & p when they're always the same? Fig 5d: why does Band 5 have a linear relationship between SNR and Radiance while the other bands show a square root dependence? Fig 18b: This would be more informative if the bands were split and the residuals were not in absolute radiance units, but relative to the continuum signal

Technical Corrections: Capitalize "Earth" Use greek mu ( $\mu$ ) instead of "u" for micrometer use "sr" for steradian instead of "str" Line 371: reword "emissivity presents higher" Line 590: "increased by 1.7" -> "increased by a factor of 1.7" Fig 7a: check punctuation in flowchart Fig 9 caption: check spacing between (a) and the panel description

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[Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2020-360, 2020.](#)

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