

## ***Interactive comment on “Long-term observation of mass-independent oxygen isotope anomaly in stratospheric CO<sub>2</sub>” by S. Kawagucci et al.***

**S. Kawagucci et al.**

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Anonymous Referee#1 pointed out 19 individual Technical problems in discussion paper. The comments are fruitful and help to improve a revised manuscript. Here, we reply to the comments individually in order.

- 1) The term [anomalous] was used as [anomalously heavy d18O] or [17O anomaly] in revised paper.
- 2) The sentence was deleted from Abstract.
- 3) The word [conserved] is rewritten to [long-lived tracer].
- 4) Delta-notation is presented at first of Introduction.
- 5) [photochemical reaction] is rewritten to [chemical reaction].

- 6) Revised according to suggestion.
- 7) Revised according to suggestion.
- 8) The reaction [CO<sub>2</sub> + O(1D)] is presented in (R2).
- 9) Revised according to suggestion.
- 10) Only the sampling period to obtain the dataset in this study, 1994-2004, is presented.
- 11) The sentence to introduce previous works is deleted.
- 12) [in the past 14 years long-term sampling] is rewritten to [The long-term stratospheric air samplings over Sanriku had been continued from 1994 to 2004].
- 13) [when the sampling are was inside the polar vortex] is rewritten to [a stratospheric air sampling was carried out over Kiruna in February 1997 within the polar vortex].
- 14) to 19) Revised according to referee's suggestions.

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