

The authors would like to thank the Editor for the suggestion about stressing the relevance of the presented samplers for stratospheric research, and for the thorough effort made to improve manuscript readability. The suggested changes have been adopted and a few sentences have been rearranged for clarity, following the Editor's suggestion.

On top of the suggested rephrasing, which has been adopted throughout the text as can be seen in the markup file, some sections have been modified to highlight the scientific relevance of COS sampling via AirCore and (Big)LISA. Being these two instruments light in weight and easy to deploy on regular weather balloons, they may become a support for the existing remote sensing network to obtain frequent stratospheric COS data, which shall help identifying the possible trends in stratospheric COS.

Major modifications are listed below and are reported as **bold text**:

Lines 32-34: We found that the differences with the averaged profiles obtained from the Atmospheric Chemistry Experiment – Fourier Transform Spectrometer (ACE-FTS) **and the measured AirCore profiles and LISA samples were less than 10% ( $\pm 50$  ppt) at both mid and polar latitudes.**

Lines 167-168: **Based on the insufficient sample volume and/or the anomalies in the measured gases, these** three samples were labelled as outliers and will not be presented in this work.

Lines 209-211: **A number of BigLISA samples (KRN - BL7, BL10, BL11 and BL12) showed unusually high mole fractions in multiple measured species.** Similarly to LISA, these samples were labelled as outliers **due to potential contamination, and therefore removed from the analysis.**

Lines 281-282: It was observed that the efficiency of O<sub>3</sub> scrubbing changed significantly depending on whether nitrile gloves were used or not while handling the cotton pads: **the scrubbing efficiency increased when the pads were handled with bare hands.**

Lines 366-369: We found that one drop of squalene from a Pasteur pipette on glass wool was sufficient to quantitatively remove O<sub>3</sub> up to roughly 12 L of air **containing 3.5 ppm O<sub>3</sub> at 50 mL min<sup>-1</sup>**, without showing any sign of O<sub>3</sub> breakthrough (and we speculate it could have possibly scrubbed for an even longer duration).

Lines 546-551: However, **some studies reported** no significant trends for stratospheric COS in recent years (Barkley et al., 2008; Coffey and Hannigan, 2010; Rinsland et al., 2008; Toon et al., 2018), **while others report significant trends that vary over time and latitude (Bernath et al., 2020; Glatthor et al., 2017; Hannigan et al., 2022; Kremser et al., 2015; Lejeune et al., 2017).** **Given the discrepancies between existing literature, more regular observations would be highly desirable to better understand observed trends in stratospheric COS over time. Lightweight instruments such as AirCore and LISA could provide a valuable tool to retrieve balloon-borne stratospheric samples more frequently, at a relatively low cost.** To realise a qualitative comparison, both AirCore profiles and SPIRALE observations have been averaged over 0.5 km bins.

Lines 624-627: Velazco et al. (2011) found COS mole fractions **obtained from the JPL MkIV interferometer** 15% higher than ACE-FTS profiles, while Krysztofiak et al. (2015) reported consistency **between SPIRALE and ACE-FTS** within 11% at polar latitudes and a positive difference of 15 – 20% at mid-latitudes, taking into account both instrumental uncertainties.

Lines 709-711: We found that, when deploying MLF bags to measure COS, it is necessary to pre-treat the bags before flight to prevent COS contamination due to outgassing from the polymers constituting the bag. **More frequent balloon-borne measurements with AirCore and (Big)LISA could provide valuable insights regarding stratospheric COS trends, among other species, and support the existing remote sensing observational network.**

The authors hope to have addressed this minor revision thoroughly and to have clarified all the aspects listed in the Editor's remarks.