

Dear Ryan and co-authors,

The referees are satisfied with your revision, and I am happy to let you know that your article has been accepted for final publication. Ref. #1 just suggested some minor technical corrections (see below) which you have the possibility to take into account before the paper is transferred to copy-editing.

Best wishes,

Aurelien Podglajen

Dear Aurelien,

Thank you for confirming that our revisions to the manuscript, in response to the reviewers' comments, have been implemented adequately. We are very pleased to hear that our article has been accepted for final publication and would like to take this opportunity to thank yourself for all your efforts in acting as the handling editor for our submission.

Please find below confirmation of our acceptance and implementation of the minor outstanding technical correction suggested by Ref. #1.

We also note erroneous reference to the November-May period we initially used for the ozone-sonde evaluation (Fig. 1d) remains in both the Fig. 1 and Table 1 caption, so we have now corrected this. We have further revised these to remove some duplication of information (please see details below). Line (L) numbers quoted refer to the new uploaded revised manuscript file.

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(L27-29): "SSW-related transport"----->"SSW-related stratosphere-to-troposphere transport"

"SSW-related transport" includes (a) stratosphere-to-troposphere transport and (b) tropospheric transport induced by SSWs' surface impact (e.g., a -NAO response to SSWs can lead to the transport of ozone-rich air away from continental Europe). If I understand correctly, in lines 27-29, the authors refer to SSW-related stratosphere-to-troposphere transport. Therefore, to avoid any confusion, it is helpful to refer specifically to "SSW-related stratosphere-to-troposphere transport" here.

Thank you for highlighting this important distinction, which accurately summarises our understanding of SSW-related transport in terms of both cross-tropopause transport and subsequent transport due to tropospheric circulation changes modulated by the SSW.

We agree that this sentence is specifically referring to the former aspect and so have implemented your suggestion:

L26-27: "SSW-related transport" → "SSW-related stratosphere-to-troposphere (STT) transport"

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#### Additional Revisions

Fig. 1 Caption (L974): We delete mention of "(November–May)" on this line as the period we use in calculating climatological composite profiles as this is no longer correct. Note that the correct period we now take as the stratospheric dynamically active season (December–April) is already mentioned later (L978).

Table 1 Caption (L1113-1118): Again, we still refer to the November–May period which has changed to December–April. We delete mention of the former (L1116) and also reduce some duplication of information.