

First of all, we thank the referees for spending time and effort to perform a thorough review of our manuscript.

Response to Referee #1

P32540 L17: Replace 3.3 by 4

> Done, Thanks!

Figure 9: I would suggest to remove the headline of the figure. It looks to me more like a working title than a title suitable in a publication.

> Done.

Figure 16: Replace the second panel index (a) with (b).

Figure 17: Replace the first panel index (b) with (a).

> I suppose this is a technical problem. In our pdf-version there is no need to replace the panel indices. This task will be completed in the production phase of the paper.

Response to Referee #2

P32548 L1-3: 'The upward propagation of the planetary waves into the stratosphere tends to be weakened by blocking highs over the Far East and western North Pacific but enhanced by blocking highs over the Euro-Atlantic sector.' A reference is needed for this statement.

> The reference "Nishii et al (2011)" is actually the relevant source. We included the reference after the sentence.

P32548 L4-6: 'In other words, the Arctic stratosphere would have been developed even further if the Atlantic blocking had not formed simultaneously with the WP pattern; see Nishii et al. (2011)' I suggest rephrasing the sentence as: 'In other words, the Arctic stratosphere would have been cooled even stronger if the Atlantic blocking had not formed simultaneously with the WP pattern; see Nishii et al. (2011)'

> Done.

In captions to figures 2,3,4,12,17,18 replace panel index (b) with (a) where appropriate.

In caption to figures 16 replace panel index (a) with (b) where appropriate.

> I suppose this is a technical problem. In our pdf-version there is no need to replace the panel indices. This will be completed in the production phase of the paper.

Figure 8 shows heat flux time series for year 2008/2009. It is not discussed anywhere in the text and can be removed.

> We left the dashed line and added a short sentence to refer to the winter 2008/2009.