

Reply to Reviewer #2

The authors expanded the discussion around the challenges of PV inversion and included valuable information on the sensitivity of their choices, which is highly appreciated and will certainly help the reader to better understand the method and its potential limitations.

Overall, the response and changes are satisfactory, though I would like to ask the authors to refrain from using "excellent" in line 191 (line ref. track changes version). As they point out themselves, there are several issues with the choices for PV inversion, so "reasonable" or "justifiable" appears to be a more appropriate wording.

We are glad to read that the reviewer considers our revisions to be helpful and our response and changes overall satisfactory. We agree that „excellent“ is too strong of a wording, in particular because we are not able to quantify the smallness of the degree to which distant anomalies affect the interpretation of boundary theta anomalies as PV anomalies attributable to the upper- and lower level components of baroclinic RWPs.

We would like to point out, though, that „excellent“ does not refer to "several issues with the choices for PV inversion“ but at this point specifically to the interpretation of the upper- and lower-boundary theta anomalies. Our rather detailed discussions in the first two responses provide our rationale why we are confident that our interpretation implies a very accurate approximation. We still agree that softening our statement at this point is appropriate. Adopting wording suggested by the reviewer, we have changed the second part of the sentence to „..., and the interpretation of the boundary theta-anomalies as upper-and lower-level PV anomalies appears to be very reasonable.“