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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Residual circulation trajectories and transit times into the extratropical lowermost stratosphere" *by* T. Birner and H. Bönisch

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We thank the reviewer for her/his valuable comments.

We agree that the causes of the two branches and their annual cycle are worth studying further in detail. However, we believe that our diagnostic study of residual circulation trajectories is sufficiently self-contained to leave these further analyses, e.g. on wave breaking for future research. See also the reply to reviewer 1 and the supplement.

Specific Comments

Section 2: We tested the trajectory calculations with daily fields of the residual circu-

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lation and the results are almost identical. This confirms the intuitive picture that the seasonal variations in the residual circulation are most important to be captured. A comment has been added to the revised manuscript to clarify.

Section 3.3: We included a discussion of the absolute deviations in the text. Given the strong latitudinal gradient in transit times, the graphical display works best with percentage deviations.

Interactive comment on Atmos. Chem. Phys. Discuss., 10, 16837, 2010.