Dear Referee #3,

Thank you very much for these very helpful comments!

According to Major Comment #1 we will change the title of the paper to a more appropriate one. Further, we will remove the misunderstandable formulations (mainly on p.15 and 16, see Major Comment #2), and we will add some discussion on the thermal structure (Major Comment #3). Of course, the latter discussion will be more qualitative as it will be only based on observations while some modeling work would be required to understand all processes of relevance, in particular the effect of gravity waves on the
residual circulation.

In addition, we will address the other general and minor comments.

Again, thank you very much for helping us to avoid inaccuracies in the theoretical background and for improving the discussion and interpretation of results!

Sincerely, Manfred Ern

Interactive comment on Atmos. Chem. Phys. Discuss., doi:10.5194/acp-2016-276, 2016.