

# Response to Co-Editor's comments

July 30, 2021

## Co-Editor Decision:

Publish subject to technical corrections (12 Jul 2021) by Christian M. Grams

## Comments to the Author:

Dear authors,

thank you very much for your thorough 2nd round of revision which I think now yield an excellent contribution to WCD. I have only two very minor suggestions for completeness in the introduction as some new aspects are now mentioned now. I leave it to you to include these references or not:

As I said I leave it to you to update or leave as is. The paper is ready for publication. Thanks again for publishing with WCD.

Kind regards  
Christian Grams

**We would like to thank the co-editor for handling our manuscript and for providing us with constructive comments. Our response to your comments are interwoven in bold in the text below.**

- 146: You now also briefly discuss the forecasting challenge provided by WCBs. This is an important upcoming topic and the few more studies available now could be cited along Maddison et al. 2019; Berman and Torn 2019 <https://doi.org/10.1175/MWR-D-18-0333.1>  
Grams et al. 2018 <https://doi.org/10.1002/qj.3353> and  
Baumgart et al. 2018 <https://doi.org/10.1175/MWR-D-17-0196.1>

**Thank you for letting us know about these references which discuss the forecasting challenges imposed by WCBs. These references have been now added in 1.46 along with Maddison et al. 2019. as follows:**

Recent studies have further demonstrated that forecast skill of the location and intensity of an extratropical cyclone with a WCB tends to influence the subsequent forecast of blocking onset **as well as of the downstream atmospheric flow (Maddison et al., 2019; Berman and Torn, 2019; Grams et al., 2018; Baumgart et al., 2018)**.

- 150: the indirect diabatic effect is likely the most relevant (cf. Baumgart et al. 2018) and one of the first studies describing it is Ahmadi-Givi et al. 2004 <https://doi.org/10.1256/qj.02.226> , which should be cited. The topic was then extensively studied in the context of extratropical transition of TCs with generalization to blocking which could be mentioned e.g. the process was first explained in detail in the context of ET in Archambault et al. 2013 <https://doi.org/10.1175/MWR-D-12-00257.1>, generalized in e.g. <https://doi.org/10.1175/MWR-D-15-0419.1> . If you preferred a concise reference to research on extratropical transition the recent review would have a section on the topic <https://doi.org/10.1175/MWR-D-17-0329.1> Section 2a and Section 3.

**Thank you for this comment. We understand the relevance of the extratropical transition of TCs to our study, and we appreciate the list of references provided to be**

cited. However, as the indirect diabatic effect is not the main focus of the current study, we would prefer to keep it short without expanding it any further. For this reason we have only added Ahmadi-Givi et al. 2004 in 1.50.

Again, we truly appreciate that you have kindly handled our manuscript throughout.