General response: We thank the reviewer for these comments. We agree that several broad features of the ITCZ response to global warming identified in our study are largely consistent with previous work, including the weakening of the large-scale tropical circulation and the changes in ITCZ precipitation and position. We do not mean to suggest that these individual responses have not been documented before. Instead, our study examines how these responses evolve across different global warming levels and how they vary among tropical regions, using the new TIPMIP framework. We plan to revise the Introduction and Conclusions to state this aim more clearly and to better place our findings within the existing literature.

TIPMIP models are coupled models which are well known for their "double ITCZ" Therefore, results, particularly those for southern hemisphere ITCZs over different sections may not be physically valid.

Response: We thank the reviewer for raising this important point. We acknowledge that coupled climate models can have biases in how they represent tropical precipitation, including the well-known double-ITCZ bias, which is most pronounced over the tropical Pacific. We agree that the Southern Hemisphere ITCZ response should be interpreted with caution. In the revised manuscript, we will add a discussion of this bias and its possible effect on our regional results, and we have qualified our conclusions about the Southern Hemisphere ITCZ accordingly.

Main results from the abstract are
1. "the global zonal mean ITCZ will contract with a higher global mean temperature, with a general displacement toward the winter "
The ITCZ generally shifts towards the hemisphere with atmospheric energy convergence and this has been investigated with many publications (Hwang et al. 2013; Allen et al. 2015; Wang 2015; Haywood et al. 2016). Generally, the atmosphere has energy convergence in winter hemisphere and divergence in summer hemisphere.

Response: We thank the reviewer for this comment. We agree that the direction of the projected ITCZ shift is consistent with the energetic framework for ITCZ position. In the revised Conclusions, we will state this explicitly and discuss our results in light of the relevant previous studies (Hwang et al., 2013; Allen et al., 2015; Wang, 2015; Haywood et al., 2016).

1. "In the various regions, the ITCZ response to increasing global temperatures generally varies, but overall, weaker updrafts are projected. "

The following sentence is cited from Byrne et al. (2018):

"Most CMIP5 models (24/32) predict reduced ITCZ strength (i.e., weaker upward motion) under global warming (Fig. 3c), with a median fractional weakening of 0.69%/K and an interquartile range of 1.75%/K. As is the case for changes in ITCZ width, this weakening is more robust across climate models than changes in ITCZ location, though there is considerable inter-model spread."

Response: We thank the reviewer for this comment. We agree that the overall weakening of ITCZ ascent in our results is consistent with Byrne et al. (2018). However, our study goes further by analysing the regional ITCZ response through the full depth of the troposphere and across multiple global warming levels. We will revise the text to acknowledge Byrne et al. (2018) explicitly and to make clear how our analysis adds to theirs.

2. “The precipitation intensity of the ITCZ band becomes stronger, despite the weakening of the Hadley cell circulation and its ascending and descending branches, with decreased precipitation projected in the descending branch”

This has been well documented by Byrne et al. (2018).

Response: We agree with the reviewer that previous studies (e.g., Byrne et al., 2018) have documented the intensification of ITCZ precipitation despite a weaker large-scale circulation. The physical mechanisms proposed in those studies are already discussed in the Introduction and Conclusions of the manuscript. In the revised version, we plan to cite this earlier work more explicitly where the result is presented.