Replies to reviewer #1

Line 47. Relies on, not in
Thanks for spotting, corrected.

Line 283. I don't understand what you mean by the responses being opposite and almost complementary. Suggest you rephrase, or just remove "almost complementary"
We removed "almost complementary" as suggested.

Line 320. I don't necessarily agree with the assessment that "most" of the improvement is due to the orographic resolution, but just looking at the graph is quite subjective. I would say, either come up with a way to quantify this (error at the peaks, or RMSE between ERA5 and experiment over particular latitude bands) to back up your statement of "most", or reduce the strength of this statement to "at least half", which I think is reasonable based on the figure.
We rephrased according to the reviewer comment, mentioning only "at least half" instead of "most"

Line 464-7. I think you mean Fig. 7e/f not, Fig 1e/f?
Correct, thanks for spotting it

Line 485. Wording: the budget itself isn't necessarily larger, it's the radiative imbalance that is larger.
We rephrased saying "which shows larger radiative imbalance".

Line 503. It is a key point that re-tuning isn't performed in the PRIMAVERA and HighResMIP projects, but the language here doesn't make that clear (it is unclear whether the 'procedure' in 'a procedure typical of…' is tuning the model, or not-re-tuning the model). Suggest to rephrase.
Line 505. "absence of improvement" seems to be overstating your results – there is improvement from the increase atmospheric resolution, it's just weaker than the improvement from orographic resolution increase. Suggested rephrase to "smaller improvement"…" relative to increase orographic resolution" or similar.
We rephrased the entire paragraph to accomodate for reviewers suggestions:
"The set up of the presented experiments followed the typical approach of the initiatives aiming at assessing the impact of horizontal resolution increases in GCMs, as the PRIMAVERA H2020 project or the HighResMIP project: EC-Earth3 was tuned only once at the standard resolution (TL255) and no re-tuning was performed for different resolutions (TL511, TL799). However, increasing the atmospheric resolution caused large changes in the radiative budget at the TOA, suggesting that the lack of a proper re-tuning of the finer resolution configurations can be considered as the mechanism responsible for the minor improvements observed when the atmospheric resolution is increased."