Dear referee 3,

We thank you sincerely for your comments which helped us to improve the quality of the paper.

Please find below our answers to your specific comments.

-[Line 105] The Froude number is so large that the consequence of the discussion may be the presence of the mountains are negligible for the winds.

Our answer: We agree that this point needs to be clarified.

We will add the following sentences Line 105:

"As described by Done et al. (2020), the high Froude number induces the flow to pass directly over the hill crest. Under mass continuity, this flow is accelerated at the hilltop due to the local constriction of the air column. These orographic wind speed-up effects have been found during Hurricane Fabian (2003) over the low hill crest of Bermuda (i.e., 86 m) (Miller et al., 2013)."

-[Methods and Section 4.2] The method section describes the time step of each resolution. The time scales of the gusts should also be discussed in the resolution dependence in Section 4.2.

Our answer:

Firstly, the numbering of the "Results" sections has been corrected. The right number of the "Effects of resolution on gusts and small-scale vortices" section is 4.3.

We agree that the time scales of the simulated gusts linked with the three resolutions should also be taken into account in this discussion.

At the end of this section, after this sentence [Line 205]:

"While the 280-m resolution and the 90-m resolution allow to reproduce medium kilometer-scale vortices and the associated surface instantaneous gust of 110 m s^{-1} with location errors, the 30-m resolution seems necessary to simulate intense subkilometer-scale vortices leading to extreme peak gusts. "

We will add the following sentence:

The different time scales of the simulated gusts linked with the three resolutions need to be taken into account in this conclusion. Indeed, the time-step values 0.883 s, 0.278 s and 0.093 s, respectively for the 280-m, 90-m and 30-m scale, could also suggest a better sampling of the extreme peak gusts at the finest grid scale.

- Tropical cyclones have the maximum wind speed at the top of the boundary layer. I suspect the "topographic effect", which results in stronger gust at the top of the mountain, is merely caused by measuring the wind speeds at the higher altitudes. Investigating the vertical profile in the wind speed in the NoSea experiment may be useful to clarify the "topographic effect".

Our answer: We agree that this point needs to be clarified.

Following your recommendations, the vertical profile of the wind speed was examined at SEA and TOP locations in the REAL030 outputs. The following supplementary figure will be added after Fig. 8.

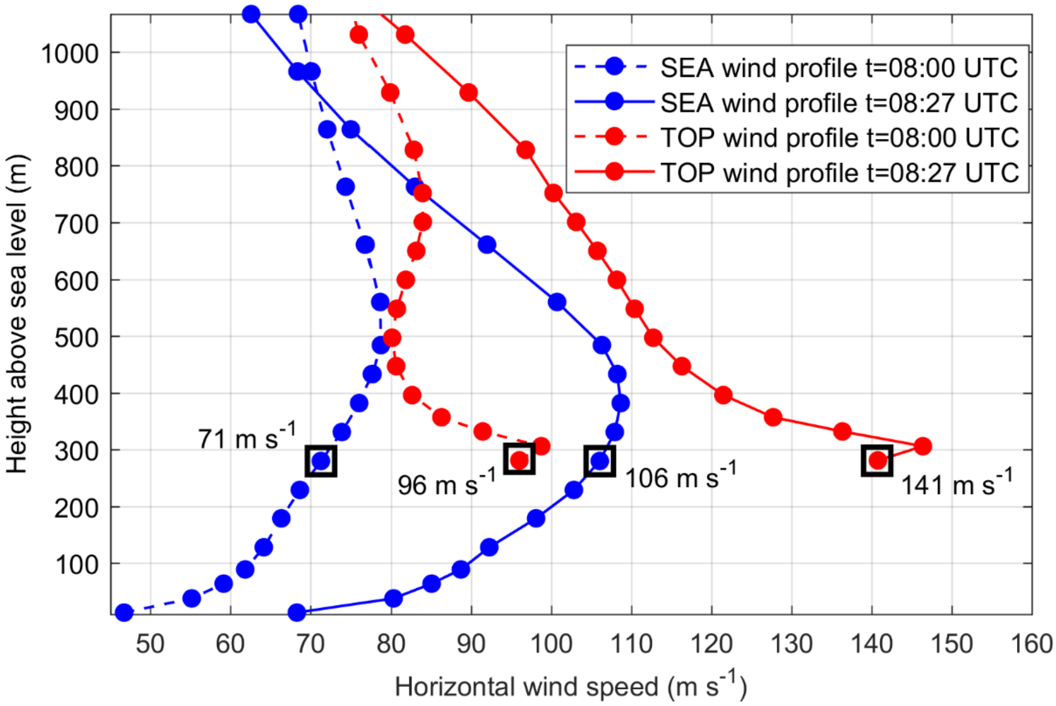

Figure 9: Vertical profile of the REAL030 instantaneous horizontal wind speed (m s^{-1}) at 08:00 UTC and at the peak gust time 08:27 UTC: comparison between the upstream winds over sea (SEA) and the orographic winds over the mountain top (TOP).

The sentence at the Line 229 "The TOP/SEA gust enhancement factor reaches 1.84 at this time" will be replaced by the following analysis:

For a better understanding of the TOP/SEA wind enhancement factor, the vertical profile of the wind speed was examined at SEA and TOP locations before and during the peak gust time (i.e. 08:00 and 08:27 UTC). The study of the wind speed at 280 m above sea level (i.e. the height of the surface winds at the hilltop of Saint Barthélemy) highlights the fact that the same level winds flowing upstream over the sea are accelerated at the hilltop (Fig. 9). This local wind speed-up factor induced by the air column constriction at the hilltop has closed values at the two times: 1.35 and 1.33, respectively at 08:00 and 08:27 UTC.