The authors would like to thank the two anonymous referees for their positive reviews and Referee #2 for the additional comments, which will be answered in the following.

Line 140: Zeropadding: First, the image is padded to a size consisting solely of prime factors 2,3, and 5 (requirement of the used variant of the Fast Fourier Transform) which in our case is 432 x 432 Pixels. It is then additionally padded with zeros for a finer resolution of the spectrum peaks. The number of zeros is twice the number of image pixels in each direction. This leads to a final image which is of size 2160x2160 Pixels (2*432*2 + 1*432).

> We inserted the relevant information in the manuscript by adding „(to a size of 2160 x 2160 pixels)" in line 128.

Fig 1: The axes in the 2d spectrum display values of the inverse wavelength (1/lambda, not 2pi/lambda). To avoid confusion, we adjusted the axis titles from k to λ^{-1} and dropped the term 'in the k-space' in the caption.

Line 265: As Referee #2 assumes correctly, the analysis of the eddy diffusion coefficient is a remnant of the former paper version. Indeed, in the revised version, we analyzed the correlation between gravity wave activity and the energy dissipation rate ϵ. Unfortunately, we forgot to update the corresponding text passages.

> We corrected "eddy diffusion coefficient(s)" to "energy dissipation rate(s)" in lines 201, 212, 213, 280 and in the caption of Fig. 7.

Figure 7: All in all, 475 correlation coefficients have been calculated. We correlated each of the SWI time series (one for each gravity wave period 6-480 min; 1 min steps) with the time series of energy dissipation rate. The latter one has no period-dependence. We hope that we have made this clearer by rephrasing Lines 211 ff. to "The time series of nocturnal SWI is restricted to those nights that exhibited at least one of the turbulence episodes presented above. For each gravity wave period between 6 and 480 min (1 min steps), the correlation between the SWI at the respective period and the energy dissipation rate has been calculated.".

> As Referee #2 suggested, we now show exemplarily the underlying time series that correspond to the most significant positive correlation of energy dissipation rate and gravity wave activity in the long-period range in Figure 7b. The caption has been expanded by "b) Comparison of ϵ and the SWI at period 401 min, which is closest to a significant positive correlation in the long-periodic part of the gravity wave spectrum (Pearson Correlation Coefficient 0.45).".

Line 298: We do mean "above the BV period" (below the BV frequency). As in the first review Referee #1 stated correctly, the small-scale features we observe are more likely instability features (like ripples) rather than gravity waves. If this was true, periods above the BV period (apparently in the gravity wave regime) could be explained by assuming Doppler-shifted instability features. Periods below the BV period could accordingly be related to high-frequency instability features, that are not subject to Doppler-shifting (and do not appear in the gravity wave period range to the steady observer).

Line 382: We corrected "periodic structured" to "periodic structures".

Line 416: See our comment on Line 265 – the term “energy dissipation rate” is the correct one. As Referee #2 states correctly, there is a slight positive correlation of energy dissipation rate and gravity wave activity with periods > 400 min, which is close to significant. We now mention this in line 216: “Long-periodic SWI (periods > 400 min) shows a slight positive correlation with the energy dissipation rate, which is nearly significant.” and provide a very careful interpretation in lines 304 ff:

- Replaced “cannot” by “can hardly”
- Added “The slight positive correlation with gravity wave activity at periods larger than 400 min may point to a special contribution of long-period gravity waves to the turbulence events we observe. However, this remains speculative at the current stage of research, since this correlation is beyond the level of significance.”

Equation 1, Figure 4 and line 205 and the following: Referee #2 wonders whether the velocity of the eddy relative to the background motion is the correct quantity to use as U in equation 1 or if the eddy circumferential velocity should rather be used instead. Having read the considerations of Hecht et al. (2021), Referee #1 recommended in the first review, we believe that the eddy velocity relative to the background, referred to as root-mean-square velocity, might be the better choice here, as our data are quite comparable to those of Hecht and we agree to his argumentation. In our opinion, the circumferential velocity is the quantity to use when applying a rotating cylinder model, as we did in the original version of this manuscript. This quite idealistic model, however, is accompanied by many uncertainties, as Referee #1 discussed in great detail in his first review. Using the circumferential speed along with the rotating cylinder model might provide an upper limit of dissipated energy in an idealized twin-scenario of the observed episode. As the focus of this work is on the presentation and analysis of observational data, we decided that using the root-mean-square approach applied by Hecht et al. (2021) may be the more realistic approach in our case.