Dear Anonymous Referee #1,

Thank you very much for your careful review and constructive comments of our manuscript. We really appreciate the suggestions you gave, which will help us to improve this manuscript. We are currently working on revising the manuscript according to your comments, which may take some time. Here we would like to give a short reply to your comments.

With kind regards,

Authors

General comments:

1. *The two highly important parameters, CNR and CI, are poorly defined …*
   Response: We agree with the reviewer and will provide a thorough definition of both parameters, CNR and CI, in a revised version of the manuscript.

2. *… there is not nearly enough discussion on the measurement uncertainty of the so called structure function Dv. The statistical uncertainty, due to inadequate sampling is also not mentioned at all in the paper*
   Response: We agree and will provide an extensive discussion on the uncertainty of EDR by performing an uncertainty analysis in the revised version of the manuscript. We are planning to use the analytic error propagation approach to investigate the uncertainty.

Technique issues:

1. *The titles for most of the plots seem to be added manually afterwards and become out of place. Most of them blocked the top part of the plots.*
   Response: We will improve or redraw all plots accordingly, making sure that all title, fonts, legend are appropriate.

2. *Why isn't there tick marks and unit in x-axis of Figure 2?*
   Response: Figure 2 was thought more a schematic figure why we didn't use tick marks, but we will take this comment into account in a revised version.

3. *How do you explain the reversal of power density at high frequency in Figure 3? Is it data quality related or does it indicate some atmospheric dynamic feature?*
   Response: We will investigate the power density at high frequency during other days and analyze possible reasons for the reversal. A discussion on this topic will be included in the revised version.

4. *On page 7, line 13, the author talks about different data quality at low altitude and high altitude. It would be helpful to show some statistics of good data at low altitude (such as at 100 m)*
   Response: As the referee suggested, this will be done in the next version.

5. *Why does the author show all these high altitude results with low CNR in these contour plots, such as Figure 4 and Figure 6. I would choose a consistent altitude range (1-3000 m, maybe) throughout the paper.*
    <u>Response</u>: In Fig. 4, our initial idea was to show the data filtering results, so we simply presented the full range. We agree with the reviewer that having a consistent altitude range improve the quality of the figures and the boundary layer height will be clearly visible. We will redraw all plots using 3 km as the maximum altitude.

6. *On page 10, line 17-18, "In general...", this sentence does make sense to me.*
    <u>Response</u>: This sentence will be rephrased as: *As we expected, the boundary layer is thicker when the conditions are turbulent than it in calm conditions, due to a stronger vertical mixing process.*

7. *on page 12, line 8, should be "These results".*
    <u>Response</u>: This will be corrected.