

## ***Interactive comment on “Characterizing Wind Gusts in Complex Terrain” by Frederick Letson et al.***

### **Anonymous Referee #1**

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The manuscript deals with gusts in a very complex terrain – the Perdiago experiment. It is a very comprehensive data evaluation of high quality measurements mainly from 9 meteorological towers, but also includes measurements from two vertically pointing wind lidars. The analysis is very comprehensive and interesting. It covers the description of gusts broadly and not only limited to “3 sec meteorological gusts” or the “Mexican Hat” gusts for wind energy. In this respect it was a pleasure to read the manuscript. I have a few comments for the authors to consider: 1. Eq.(1). There seems to be a minus missing 2. Eqs. (6), (7) and 8(9. Is it possible to provide references for the transfer functions. 3. Although in the introduction the broad importance of gusts is described, on page 8 line 7 the thresholds that are applied in the data analysis here relates to wind turbines and wind energy. This limitation in the study should be mentioned more

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specifically and put up-front. 4. Figure 5. It is difficult (impossible for me at least) to distinguish between the frame of the blue and black boxes. 5. Figure 10. The figure and its legend are very busy. I suggest having figure 10a as a separate figure. 6. Page 19, line 10 to page 21, line 14, I find the idea to devise specific spectra for gusts periods and non-gusts periods as rather artificial and it does not contribute much to the overall discussion on gusts. The same goes for the discussion on the reverse height, which also does not adhere to the findings of the gusts characteristics.

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