Response to the final comments by the Co-Editior Dr. Bernhard Vogel (acp-2016-350)

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1) The abstract is still too long. The finding should be the main part of the abstract, not the method. Please shorten.

The first paragraph of the abstract has been shortened. The second one remains unchanged.

2) Page 6, line 163: What do you mean by reliable averages? 'robust averages' might be the better wording.

We agree that 'robust averages' is the better wording and have changed it accordingly (line 162).

3) Page 6, line 164: 'a non-dimensional mixing ratio r'. In my view r is by definition the mass mixing ratio.

Mass mixing ratio is indeed better. We changed the wording as suggested (line 163).

4) Use 'Brunt-Väisälä frequency' instead of 'buoyancy frequency' throughout the whole text.

All instances of 'buoyancy frequency' have been replaced by 'Brunt-Väisälä frequency' (lines 7, 29, 140, 147, 269, 570, page 17 footnote and Fig. 8 (caption)).

5) I see no reason to use the abbreviation SWL and V2 for the same quantity. Moreover it is even confusing.

We agree that the usage of the abbreviations SWL and V2 at the same time is suboptimal. The difficulty is that the term 'slope wind layer' is used in a slightly more colloquial way (i.e., without a strict definition, since multiple definitions exist) in the introduction, but the well defined volume (V2) is introduced later on in the methods section. The num-

bering of the volumes (V1, V2, V3) is also necessary and convenient since the fluxes f_ij are named using the corresponding indices. In other words, V2 is the slope wind layer after one particular definition and hence the possible confusion.

We have decided to solve this problem by removing the abbreviation SWL and replace it with 'slope wind layer' in the introduction, the discussion, the methods and the general description of the flow. In these section, a more intuitive name seems more appropriate and helpful to understand the presented research. In the sections 3.2, 3.3 and 3.4, where the results are presented with reference to related fluxes, we have replaced SWL by V2. Also, some occasions of 'slope wind layer depth' have been changed to 'd_{swl}'. These changes affect the lines 31, 43, 44, 45, 48, 51, 53, 57, 68, 75, 92, 104, 172, 173, 174, 175, 178, 183, 225, 227, 230, 233, 234, 244, 245, 249, 256, 257, 260, 270, 274, 276, 277, 280, 286, 287, 291, 295, 296, 306, 307, 310, 318, 319, 323, 325, 326, 332, 345, 351, 354, 362, 371, 394, 396, 397, 401, 402, 407, 412, 415, 417, 420, 421, 422, 423, 424, 426, 480, 482, 483, 484, 487, 491, 492, 493, 498, 500, 502, 503 and 528.