

## ***Interactive comment on “A meteorological and blowing snow dataset (2000–2016) from a high-altitude alpine site (Col du Lac Blanc, France, 2720 m a.s.l.)” by Gilbert Guyomarc’h et al.***

### **Anonymous Referee #3**

Received and published: 31 July 2018

#### General comment:

This manuscript presents wind, snow depth, and air temperature measurements from four automatic weather stations and measurements of blowing snow transport in a high-elevation site in the Col du Lac Blanc, France. This is a useful dataset contribution, providing a valuable set of observations, which can be very useful for high resolution snow transport modelling in cold regions. The manuscript is well-written and could be improved by cutting details about modelling and empirical method and reorganizing the text. I recommend publication in Earth System Science Data as a regular article in the data section after a moderate revision. Below are some specific comments and

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suggestions for improving this manuscript:

1. The manuscript is too long. I would recommend authors to focus more on the data and less on modelling and empirical estimation of snow transport.
2. From the text it is not clear how data gaps were filled and quality controlled?
3. So many acronyms were used in the abstract and text that makes it difficult to follow the content. It is suggested to avoid unnecessary references (e.g., one in the abstract) and acronyms e.g., OZCAR, SAFRAN, CLIMate, OSUG, CNRS, ETNA, IRSTEA or Irstea (line 61), ARPEGE (166).
4. The main concern is that comparison of the two snow transport (frequency and mass) products, estimated by an empirical method and measured by Snow Particle Counter (SPC), is not one to one and I could not obtain the same conclusions that the authors have provided at the end of the section 2.3.3.

Editorial comments:

Abstract-Line 20: Remove "data" after "Observations".

Abstract: What does "SAFRAN" stand for? What is a local meteorological reanalysis?

Replace "altitude" with "elevation" in the manuscript. "Elevation" represents the position of the sites and stations better than "altitude".

Line 54: Which "last seasons"? Provide more details.

Line 65: replace "strong" with "large".

Figure 1: define all the subplots in the figure caption. Only subplot c is defined in the current caption. Add geographic names on subplot a.

I recommend Table 1 to be merged to Table 2.

Line 133-134: The "...from AWS Muzelle and Col are available from winter 2002-2003

and 2010-2011..." is not consistent with Table 2. Check this. Even it is recommended that you remove this as it is already repeated in Table 2.

Section 2.2.1 Wind speed and direction: I would avoid using indices or names for the sensors (e.g., lines 138, 141, 147, 157) in the text and mention them only in Table 2.

Line 168: replace "get" with "obtain".

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Interactive comment on Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2018-74>, 2018.

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