The study combines the seismic and infrasound data obtained in two arrays distant < 500 m placed at the end of the powder-snow avalanche path occurred on February 5, 2016. The infrasound array was in a direct visual position of the avalanche path, while the seismic array not. The study is limited to the frequency of 4.5-10 Hz for the geophone data and to 1-10 Hz for the pressure data measurements. The results are contrasted with the outputs of RAMMS modeling. Conclusions refer, basically, to the different origin of the infrasound and seismic wavefields and also to the implication in the calculation of the avalanche size.

It is a very interesting contribution, although the authors have not take into account the previous paper of Kogelnig et al., (2011) where seismic and infrasound time series are compared for four different types of avalanches at the VdLS experimental site, descending along different paths, unlike the one presented in the manuscript under review in which only one avalanche is studied. In this paper the infrasound and seismic time series obtained in collocated sensors with a common time are compared, and also with the time series obtained in two more seismometers placed along the avalanche path. Additionally, a comparison was made with other "in situ" direct measurements (flow depth and internal velocities). The frequencies involved in the study are in the range of [1-40] Hz for both type of measurements. Of interest is the content of "low" [1-3] Hz frequencies of the seismic when comparing with the infrasound.

Because of the completeness of these data, with respect to that of the data of the manuscript under review, the authors must take into account in their discussion and conclusions the results obtained previously. In principle, part of the obtained results by the authors could confirm the previous ones or contradict them.

The use of the combination of the two arrays in this study is very positive, but the authors must be aware of the limitations of their study. In addition, the results presented also depend on the specific topography. One of the difficulties of the comparison of the results of the two arrays is that the infrasound array has a direct view of the avalanche flow and the array of geophones does not. What would happen in the case of the existence of a shadow zone for the infrasound? Or if the seismic array had been collocated with the infrasound array?

As regards Section 5.

Kogelnig et al. (2011) includes a section dedicated to the source of infrasound and seismic signals. There, a synthetic signal is obtained using the expression of Ffowcs Williams (1963) that describes the acoustic intensity generated by a turbulent source in motion. The modeling results are compared with the infrasound time series obtained from an avalanche. In addition, due to the existence of a suspension layer that can generate infrasound, an explanation is included for not considering a unic specific source of infrasound. In addition, the flow dimension D is calculated for the dominant frequencies. The authors must take into account in their discussion and conclusions the results obtained previously.

A remark on Figure 4.

This figure is very important in the interpretation of the time series and the results. Note that the origin of the time series corresponds to the farthest distances. To facilitate interpretation with the time series, the authors must convert the distances into time (using the obtained speeds) and reverse the origin of the distance. In addition, the slope angle (derived from the profile) incorporated in Figure 4d with the outputs of the RAMMS model will help to better correlate the slope change with the features of the time series.

The manuscript is of interest to the community. It contributes in one more step to the knowledge of the wave field generated by snow avalanches for the application to its detection. I recommend to the authors an exhaustive review taking into account my comments.

Below further details.

In my review I remark when Kogelnig et al. (2011) also had a contribution, consider it.

The limitation in the frequency content used in the study must be indicated in the abstract.

- Line 48. Please, confirm that this reference is correct. There are different contributions of these authors with the same title, e.g.

.Naugolnykh K, Bedard A (2001) A model of the avalanche infrasound radiation. In: Proceedings of the 24th Canadian Symposium of Remote Sensing. pp 871–872

.Naugolnykh K, Bedard A (2002) IEEE International Geoscience and Remote Sensing Symposium DOI: 10.1109/IGARSS.2002.1025713.

But I am unable to find that you mentioned:

.Naugolnykh, K., and Bedard, A.: Model of the avalanche infrasound radiation. Proceeding of International Snow Science Workshop, Jackson, WY, 19-24 September 2004, 871-872, 1990.

Lines 76- 90.

-Line 77. Please, check the figure numbers. e.g. Is figure 2c correct or it is 1b?

Although it is indicated in the abstract you must mention here the distance between the arrays

-Line 85. Figure 1c?

-Lines 91-93. This assertion will be correct assuming that the earthquake is recorded in the infrasound sensors. An explanation on this, references, or more detail is needed.

... <2 s assuming the difference in wave travel time and wave propagation speeds of ... and a distance of ...

-Line 100. Please, check if Figure 3 is correct.

- Line 123. Indicate which sensor corresponds to the time series presented in Figures 5 a and b. Or are they stacked time series?

- Line 131. Are you sure about 35 s? Could you specify the signal limits here even if you do it below?

- Lines 140-143. In fact, there are two speeds, one of the infrasound waves in the air and the other corresponding to the source (avalanche). Authors should specify this somewhere, here or above in the presentation of the method.

- Line 147 February

- Line 149. Note that the only effect of the low pass filter is in the infrasound, because the geophones natural frequency is 4.5 Hz

- Line 160 approx. 35 s as indicated in Line 131.

- Line 162. An explanation of the difference between the detection of time arrival of the matrix and that of the seismic amplitudes observed at 18.30 (Figure 5a) that are clearly due to the avalanche is necessary. Given that the velocity of the seismic waves in relation to the avalanche speed and that of the infrasound in the air, it seems that the avalanche started earlier than indicated.

- Lines 167-169. Does it refer to the processing of the seismic array or that of infrasound? Please specify.

Vilajosana et al. (2007a) obtained the mentioned ground phase velocities from waves generated by explosions at Ryggfonn. These speeds are independent of avalanches. This is a feature of the site. I think there is a misunderstanding. Please clarify.

- Line 176. Section 5. See previous comment on this.

- Line 181. Auxiliary material. Do you mean the video? Include the reference.

- Line 181. ...radiated from a point source

- Line 184. ... along the path considering a point source

- Lines 210-211. This could be an effect of the relative position of the arrays as mentioned by the authors in Line 214.

- Line 227. With your results, there is not enough information to generalize to all the avalanches, in plural.

- Line 232. Remember the content in Kogelnig et al., (2011).

- Line 246. and references therein....

- Line 249. Note that the effect of filtering from 1 to 10 Hz and realistically, from 4.5 to 10 Hz, also presents problems in the quantification of the energy, since part of the signal is lost.

- Line 252. This was also mentioned in Kogelnig et al., (2011)

- Line 260-264. The authors must specify that this is in the range of frequencies considered [1-10 Hz] and [4.5- 10 Hz], respectively.

- Line 275. Please specify this reference. See Line 48.

- Line 277. Are you sure that including Π in eq. 2 is correct? Are you considering radians?

- Lines 288 - Specify in the Conclusions that the results correspond to the case of study, for a powder-snow avalanche recorded at 1000 m from the starting point.

- Line 292. ....source mechanism of the infrasound

- Line 293. Specify the wave parameters (back-azimuth and apparent velocity) or rephrase the two sentences.

- Line 294....purposes in the case that a powder part develops.

- Line 295. What happens if there is a sharp change in the slope were a powder part is also developed? See e.g.

https://www.youtube.com/watch?v=WAbIcWxwGg4

- Line 303. Please indicate in % what it means strongly affected. In addition, you must consider the different frequency content of the two time series in your calculations.

- Line 313. Energy radiation

- References

Please, Indicate correctly the spelling of the surnames.

-Figures

- Figure 1. In Figure 1b) the s7 sensor is missed.

Figure Caption 1. Replace “array” by (c) arrays. Indicate the meaning of si and mi.

- Figure Caption 2. Replace runout zone by maximum runout zone.

- Figure Caption 3 Specify the array (infrasound?). The arrays are distant 500 m and the scale is not included.

- Figure 4. Redraw figures c) and d) according to my previous comments

- Figure 5c) Replace spectal by spectral.

- Figure 6. In Figure 6b) convert counts to ground speed and include in the horizontal axis the title like Figure 5a. For the benefit of the comparison, change the vertical scale on a more detailed scale for the posterior azimuth 6d) and the apparent velocity 6f) of the seismic data, even if you lose some outliers.

- Figure 7. Indicate units, when necessary, in the Figure and in the Figure caption. ºN is it correct in Figure 7c).

- Figure Caption 8. Indicate the location of the arrays.