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Earth Surface Dynamics Discussions

Interactive comment on "Short Communication: Monitoring rock falls with the Raspberry Shakes" *by* Andrea Manconi et al.

Andrea Manconi et al.

andrea.manconi@erdw.ethz.ch

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Dear Jan, thanks for your detailed comments to our manuscript.

As suggested, in the revised version we will better calibrate the target of our contribution, focusing more on preliminary results and performance evaluation of the Raspberry Shake (RS) at Moosfluh. Regarding the internal processing chain of the RS, we will include some more details we are aware of but some information is not available to us (we already asked) because it is OSOP proprietary information. However, we will also include a comparison to a reference seismic station located in the vicinity of our network (i.e., FIESA) to corroborate data and results gathered with the RS. Then, we will remove overlapping technical parts present both in Section 2 and in the supple-

mentary material. About your question "Why do you choose a 1D RS and not the 3D or 4D", when we have acquired and installed the RS at Moosfluh the versions 3D and 4D were still not available. The performance analysis of earthquake detection presented in Figure 2 is based on the STA/LTA parameters used and on the travel-time model considered. In any case, the "baseline" would be 100% detection; we will better clarify this point in the revised version. Concerning the analysis of the rockfall catalog, we agree on the potential effect of NTP on timing accuracy. The best timing accuracy we can get with the RS is within 1 sample, thus 0.02 seconds in our case (as per tech. spec.). As far as we know, NTP inaccuracies are usually associated to network outage, and we are investigating this point specifically. We will plot Figure 4 by showing the potential effects of time inaccuracies, showing that this will not affect the differences in amplitude between the three stations and few milliseconds will produce only a minor change in the phase. The only problem we foresee for inaccurate timing is while attempting source location. However, we speculate that the timing error in our case will be of the same order (or even smaller) than the location errors produced by considering an inaccurate velocity model. The details about the NTP effects will be clarified in our revision. Since you mention to know quite well how NTP performs over cellular links, we would appreciate if you could specifically indicate some reference or details that can help us! In the supplementary material, we will cite correctly the OSOP documentation but keep figures S1 and S3 because we think that not all potential readers of the manuscript will go and check the RS specifications and manuals, thus we think is useful to have it also here. Figure S3: we will include the information on the investigated period of time (July-October) also in the figure caption. Regarding the correlation with environmental/climatic variables, this is currently under investigation; however, there is not an evident effect due to the instrument used. Figure S4: this event was found manually; we wanted to show that the sensitivity of these instruments is good not only for local mass movements but also to detect landslides occurring far from the installation. The point will be further clarified in the revised version.

Best regards, Andrea Manconi and co-authors

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