Review of the manuscript "Seismological analysis of flood dynamics and hydrologically-triggered earthquake swarms associated with storm Alex " by Chmiel et al. for publication in NHESS.

General comments

The article presents and analyses seismological records at permanent stations related to the storm Alex, which hit the southeastern France in October 2020. This storm was particularly damaging with important flash-flood waves in the rivers, in particular the Vésubie river. The seismological analyses consist of the temporal evolution of the seismic power, the peak frequency and the backazimuths owing to follow the flood propagation. The recordings alos make it possible to detect induced seismicity as three swarms triggered several days after the storm.

This paper is of great scientific interest, very well-written and well-illustrated. It uses seismological records in an original way in order to constrain the timing and the propagation of river floods in the area affected by this exceptional weather event. In addition, the detection of induced earthquakes highlights the importance of the rainfall in the seismic activity.
The manuscript is acceptable for publication with minor revisions as suggested hereafter.

Specific comments

- A threshold at each considered seismic station is used to define the seismic power maxima. It is not clear, and it is not explained, how these thresholds are determined/fixed: from the background noise? From an average of the seismic power over a time window? Please, clarify that point.
- Again about the seismic power peaks, is the third one specifically defined with the TURF station because it is not very clear on the other two stations?
- Regarding the migration velocity of the earthquakes, are you sure that the velocity is in m/h and not in m/day (line 240)? Commonly, this velocity is considered to be from 10m/d to 100m/d, and Chen et al. (2012) found a velocity at 38m/d. The velocity you determined here, implies a velocity at 500-800 m/d, which is near aseismic slip (according to Chen et al., 2012). Are you considering the migration velocity of the earthquakes inside a swarm, or the migration velocity from one swarm to another? In this last case, I am not absolutely convinced that we can relate the time occurrence of the swarms to a fluid-driven migration. For example, in the central swarm, there are events at around 10 days as in the southern swarm, but also the latest events at more than 60 days (Figure 3).
- Any comment on the fact that the "induced" seismicity by the storm is nearly at the same location of the previous background seismicity, especially at depth?
- Finally, do you think that such seismic observations can be used to improve the rainfall-runoff simulations?

Technical corrections

- line 24: put the citations into (…)
- line 44: these observation**s**
- Figure 1A: there is a small typing error in the color scale where 30 is for 300
- line 77: the sentence begins with a "."
- line 78: concerning the "40 rain gauges": Only one is visible in Figure 1A, and then at what distances are they?
- Please indicate more precisely that Figures B5 and B6 are for SPIF station.