

## ***Interactive comment on “Temporary seismic monitoring of the Sulmona area (Abruzzo, Italy): quality study of microearthquake locations” by M. A. Romano et al.***

**Anonymous Referee #3**

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The paper is well written and it represents a good example of detailed seismological study conducted in regions characterized by high seismic hazard but where the low level of instrumental seismic activity do not allow the accurate investigation of the ongoing seismic activity. The data presented are newly acquired and the processing procedure is well described. The method used are the state-of-the-art methods to process continuously recorded seismic data in order to lower the magnitude of completeness of the final catalogue and to improve the location quality of the recorded low-magnitude seismic events. I suggest to simplify the paragraph “Improvement of phase readings”. This paragraph contains too many details. As a result, the improvement of the hypocen-

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tral location by going through the different steps described in the paragraph is not clear. Additionally, if I understood properly, the authors merged the dataset of arrival times manually picked at the stations of their temporary network (STN) with P- and S waves arrival times from permanent stations of the RSNC with no further revision of the phase picks (for events in common with the ISIDE database in the analysed time window). I do not agree with this choice, since the homogeneity of the uncertainty associated to each phase reading (data weighting scheme) is crucial in the inversion procedure for earthquake location determination. I ask the Authors to comment on this aspect.

Figure 9c and 9d: I suggest to increase the number of bins to show the horizontal and vertical formal location errors. A bin of 1 km is not appropriate to the dataset shown in this paper.

The technical as well as the English language is simple and easy to read and understand.

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