

### Reviewer #3 (Kasper van Wijk)

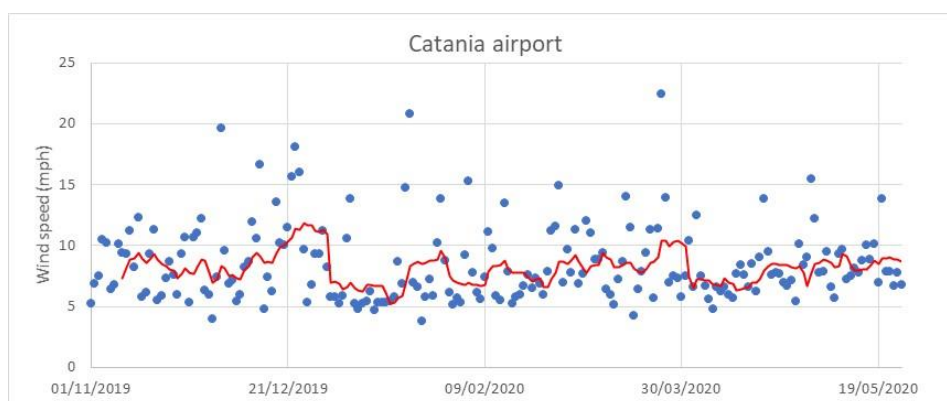
"Seismic evidences of the COVID-19 lockdown measures: Eastern Sicily case of study" analyzes the data from the seismic network on Sicily during the lockdown. I am attaching an annotated pdf with smaller comments, mainly with some writing-related suggestions. In terms of the science, the analysis is thorough, and could be published in its current form. However, I wanted to propose something for the authors/editors to consider.  
> *We really thank the reviewer for the positive comments, as well as for the very helpful suggestions reported in the attached pdf.*

To me, Figure 11 is the most exciting result: an increase in detection levels for earthquakes during the lockdown. I would provide more info (and data to show the increased S/N!) on this, and have a more focused build-up to this result, and have maybe less of the first 10 figures, as most of those observations were already reported in other settings in the existing published literature on this topic. If the authors agree, the abstract and conclusions should also highlight this result with quantitative information on this enhanced detection level.

> *Following the advices of the other two reviewers, we repeated the earthquake detection analysis by considering only earthquakes recorded during day-time and weekdays, but the number of extracted events was very low (25 and 85, during and before lockdown, respectively), to be statistically significant. In addition, we also evaluated the Gutenberg-Richter relationship separately for earthquakes, taking place during and before lockdown, and we did not note any significant changes in the completeness magnitude, equal to 1.6 in both cases. Hence, we think that this topic would need a more in-depth analysis. Following the advice of the reviewer #2, we decided to delete this section regarding the detection improvement and keep it for a next narrower, more focused study.*

Finally, I was wondering if weather data is available for the region? I say this, because it may be that winds could shake trees and buildings affecting seismic noise, even in the 10+ Hz band. If you agree, a correlation between wind speed (for example) and seismic noise levels may help build the case that enhanced detection level of earthquakes is due to anthropogenic quieting during the COVID-19 lockdown on Sicily.

> *Actually, the period preceding the lockdown falls in winter, while the lockdown mainly in spring, so worse weather conditions (as well as the corresponding more intense seismic noise of meteorological origin) are expected in the former. However, in the following plot, we show daily wind speed data as recorded by a meteorological station installed in the Catania airport (red line is the moving average over 10 days). Such data do not show so evident changes in March 2020, to make you think that the observed seismic noise decrease could be due to meteorological variations.*



*In addition, the seismic noise amplitude started increasing again at the end of April, suggesting that the previous decrease cannot be due to variable weather conditions, but rather to anthropic activities. Finally, the correlation analysis between seismic data and human mobility confirms that the amplitude reduction is related to the decrease in anthropic activities. We added some sentences about this at the end of section 3.*

**Other comments in the attached pdf:**

where does this very precise, but not round number come from? why not 82 seconds?

> *Such a number is due to the fact that spectral analysis by FFT requires power of two for the number of data points; the signals are acquired at 100 Hz, and then 81.92 s corresponds with 8192 points ( $2^{13}$ ).*

how about a line for when the LD ended?

> *We added a line in Figures 2, 3, 4 and 9a on 4 May 2020, when the first Presidential Decree, slightly releasing the lockdown measures, was issued.*

you may have discussed this later in the paper, but how did weather affect this result? The island stations in the North seem to have a large reduction. Could this be that one of the periods had more wave action than the other?

> *Sea wave action should create seismic noise (microseism) at low frequencies, below 1 Hz. In Figure 5 we showed the percent change of seismic RMS amplitude in the band 10-40 Hz. In addition, the seismograms shown in Figure A5(a) clearly show that the decrease in noise amplitude is not due to variations in a continuous signal (as microseism should be) but rather to the reduction in the occurrence rate of amplitude transients that in the Aeolian Islands are associated with ship activities. Finally, we added a reference, confirming that during the first period of COVID-19 pandemic marine traffic was affected by a dramatic decrease at the global scale, as well as ship traffic data of Lipari port, that correlate fairly well with seismic noise variations in ILLI station.*