

Interactive comment on “The effect of confinement due to COVID-19 on seismic noise in Mexico” by Xyoli Pérez-Campos et al.

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Response to comments by Kasper van Wijk is within a line of *. Comments from the pdf version of the manuscript have been added to the comments from the reviewer.

- Figure 3: it is not clear (and I am not sure) that the blue line is the local number of COVID cases. Maybe I missed it in the text, but it should go in the caption, legend, and be quantified on a right y-axis. What does this show? A lack of correlation between seismic noise and cases (is that the blue curve? caption, axis, annotation missing)

Thanks for the comment, we missed the description in the caption. The caption should read: “Figure 3: RMS noise for frequencies 1 to 5 Hz at stations located in capital

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cities (left axis, black line) and official confirmed COVID-19 cases at each state (right axis, blue line).” Also, we agree, the figure should be modified to include the number of confirmed cases on the right axis. The number of confirmed cases is by state. The stations are located at the state capital where most of the cases have been reported.

Comment in page 8, line 163. What time of day was the event?

The event was at 20:52 local time. Usually, Monday night, at that time traffic in the city is still heavy. The streets were quieter than Monday due to lockdown. The event in 2017 was after midnight when the city is quieter but not as quiet as during lockdown in April. The following table shows times and days of the week when the listed events happened.

Date	Local Time	Day of the week	Magnitude
6 April 2020	20:52	Monday	5.0
4 June 2019	14:12	Tuesday	4.9
13 February 2017	01:29	Monday	5.0
2 December 2016	07:57	Friday	4.9

- Figure 4: this is potentially very interesting. Can the authors apply some statistical analysis for a seeming increase in detections of weak events? What alternative explanations to seismic quieting could give rise to such an increase? This may require some hard-core stats to show there is an uptake in reports of small events?

The effect of the increase in detections of weak events for the whole period is related to the addition of more stations to the SSN operations. We will further investigate if during 2020 there was any station addition or if this reduction is regional, or associated with a specific station. The national network covers a large territory and in some places is sparse. Therefore the national catalog, used in Figure 4 might show all these possible effects. We'll be careful to discriminate against other possible causes, then we'll decide

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if hard-core statistics are actually needed.

- Figure 5: The top panel is very convincing that the lockdown cleans up urban seismograms. The bottom panel may be convincing too, but it would be good to know at what time of the day (local time) these two events were. If they were at a similar time, this is more evidence of lockdown quiescence. top panel is convincing. Bottom panel depends: if the 21 June event was at night and 27 January event during the day, this would explain the difference.

The time of the events shown in the bottom panel is 01:11:59 for the 27 January (Sunday 19:11:59, local time) event and 23:08:59 for the 21 June (Sunday 18:08:59, local time) event. The times are very similar. After re-reviewing the events, the magnitude for the first one was 1.4 while it was 1.2 for the second one.

- As this is now part of a special issue where other papers with similar "local" studies have been done, I'd like to see a discussion on how this example relates to other local studies in this special issue.

Since more manuscripts have been uploaded, we'll follow the reviewer's advice and will include some in the discussion.

If the authors are willing and able to address the above points, maybe the results can be incorporated to strengthen the conclusions of this interesting field study of lockdown seismology. Thanks a lot for the comments, they'll enrich our manuscript and strengthen our conclusions.

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Interactive comment on Solid Earth Discuss., <https://doi.org/10.5194/se-2020-204>, 2020.

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