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Discussions

Interactive comment on "Seismic noise variability as an indicator of urban mobility during COVID-19 pandemic in Santiago Metropolitan Region, Chile" *by* Javier Ojeda and Sergio Ruiz

Anonymous Referee #2

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The paper is well written and straightforward. Although several cases of the noise level decrease due to lockdowns, curfews, quarantines in different places have been documented in several countries during last year, it is welcome to have another example from a big city that correlates the decrease with some social index. I recommend the paper for publication after some review.

Abstract: Please, consider to mention in the abstract the results with other stations in Chile (section 3.3)

Line 24: real time to real-time

Line 25 : high density to High-density

Line 35: risk of the spreading of the virus to risk of the virus spreading.

Line 65: Please, consider to include large and long-scale events in big cities. I believe that this is important to stress.

Line 76: Is there any particular reason for the installation of the stations in the capital?

Line 76: Please, provide further information on the conditions where those five stations are installed. Any special treatment because they are inside the city?

Line 80: Although you are using the horizontal components to see the noise decrease, I recommend to perform the noise polarity analyses to check the direction(s) of the noise origin(s). I believe it is important to check with the direction of the park, airport.

Line 83: For all stations we processed to For all stations, we processed

Line 93: Normalized in relation to what? Normalized individually or among then?

Line 103-104: The median day-time amplitudes between 5h and 22h local time obtained from the seismometer and the accelerometer exhibits similar trends and behaviour to The median day-time amplitudes between 5h and 22h local time obtained from the seismometer and the accelerometer exhibit similar trends and behaviour.

Line 105: Please, provide an explanation of why Saturday is the noisier day of the week, according to 4a. Is it due to the of people in the park? But Sunday is equivalent to Friday. Some explanation is in line 214. Just call attention to that.

Line 106: This reduction on the weekends, are you talking about the figs 4a and 4b? In 4c it is not easily identified.

Line 106: Please write the date of the Lockdown, beginning and end?

Line 110: Is it possible to indicate the park in figure 1?

Line 111: Sorry if I misunderstood the sentence but how does a curfew between 22 h and 5 h reduce amplitudes between 5 h and 22 h?

Line 116: Website of the Ministry.

Line 118: Please, provide further explanation of the Re. What does it mean and how is it measured?

Line 120: What is ICOVID? An intitution?

Line 124: How is the Apple data measured? Change in relation to what?

Line 130: Could you plot the airport location in figure 1?

Line 139: Is there a website where we can find the ppsd (Probabilistic Power Spectral Densities) from all stations?

Line 139: Were you able to identify some decrease during the holidays? Like Christmas, Good Friday.

Line 145: Just call the attention of the reader that the average amplitude is different for each station. Like MT18 is 15 nm and MT16 is 1.5 nm?

Line 159: Just to make it easier for the reader, please provide the information about the approximate distance between urban and rural stations.

Line 169: This peak is not so clear in the for the MT18. Some explanation for that? By eye, I believe the MT18 and Re correlation is worst, am I right? Same for Apple's data

Line 174: Where is the airport?

Line 175: I am sorry, I believe the is a problematic sentence: Is there any confirmation by the government that Lockdown 2 was responsible for the mitigation?

Line 176: Please, explain the five phases. Just a short sentence is enough.

Line 188: Please, make reference that the reader can see where those cities are located in Chile looking at Fig 1.

Line 195: CCSP shows an average of 30 nm "noisier" the MT18. some explanation?

Line 197: MG01 shows a strange pattern. Like a strong decrease in January.

Line 231: transmission of virus to transmission of the virus

Line 272: implemented in other high density cities to implemented in other high-density cities

Line 272: Please, cite some examples where we can find those networks and the impact of their study not just in the mobility but as a tool to teach seismology to school students and the society like Barcelona for example.

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Figure 1: I would recommend decreasing the coastline thickness, it is blending with the stations

Figure 2: Is it just an impression or the gaps for the 1-10 Hz are narrower than the others? Just some "illusion" played by the colours?

Figure 3: End of the lockdown 2?

Figure 3: Difference between the blue and white background.

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