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**Interactive
comment**

Interactive comment on "Natural hazard risk of complex systems – the whole is more than the sum of its parts: II. A pilot study in Mexico City" *by* Marcello Arosio et al.

Anonymous Referee #2

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("general comments")

In general, I got lost reading the results from where the concept in graph theory relates to vulnerability. I realize that is in another paper, but that other paper at least needs to have terms summarized in a table to help the read apply the concept to Mexico City. It seems useful to think about how a disaster causing cascading effects to different "hubs" of services and how vulnerability propagates. I am unclear however if this is a conceptual case for Mexico City or an empirical one, because I don't know where any of this data really comes from. There are way more schools and hospital than are placed on this map. And two of the most vulnerable boroughs- especially Xochimilco to

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floods- is for some reason erased. And how are you dealing with informal settlements? Is that population (which is somewhere between 200,000-1 million people in the city) represented? Data exists for them, and I would expect it would be interesting to include them because they will have demand for services but won't provide anything. The graphs need work to help the reader (maybe a table will solve this) because as written its tough to related skewness/sd of each variable to. . .what it ideally should be (consider adding the "ideal" line to the graph).

Finally, how do the results line up with actual vulnerability in the city? Can you compare to existing risk maps or media data? Its hard again to know if we are supposed to take this as an empirical case or a conceptual one.

Specific comments: Line 160. I presume most cities are going to have this distribution. Non-homogenous. Is there any reason to suspect Mexico city departs form what is likely the norm of how humans tend to self-organize and adapt?

190-200. I am not totally getting why closesness in is making something more vulnerable. I think I need a conceptual diagram or table of definitions of what is normatively desired vs. non desired for risk management.

Line 305. This is a very short description of a flood model. Where did you get the DTM. I don't think 10m of flooding is realistic. Was this validated in any way?

345. percolation threshold? Why introduce a totally new term this late!

Figures Figure 2. Tlahuac is spelled wrong. Why is xochimilco and milpa alta excluded? Where is this data from? Is this conceptual or empricial?

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., https://doi.org/10.5194/nhess-2018-278, 2018.