

Interactive comment on “Assessing the tsunami building vulnerability PTVA-3 and PTVA-4 models after the 16S 2015 event in the cities of Coquimbo – La Serena (Chile)” by Eduardo Fritis et al.

Anonymous Referee #3

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This paper applied existing vulnerability models to a city in northern Chile. The authors used tsunami inundation data from the 2015 Coquimbo tsunami. The methodology considered two PTVA modes, namely PTVA-3 and PTVA-4, thus results of both methods are compared. The results of vulnerability assessment are also compared with damage data surveyed by the Ministry of Housing (MINVU).

One of my major concerns is that the paper does not present new concepts or methods, it is just an application to a very specific location.

The authors mention in the text that "...the RVI scores cannot be used to predict which buildings will reach or exceed a given damage state.....the aim of our comparison is

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not to provide a damage description to a given RVI score but to verify if the low RVI scores correspond to minor building damages and viceversa.." As a novel thing here, would it be possible to propose a correlation between RVI and damage state?, Would it be possible to add other variables or weights to the model such a better correlation is obtained?

I recommend to avoid using the words PTVA in the title, thus the subject is more clear and easy to understand by a wide and general audience. In fact, the meaning of PTVA is never explained throughout the text. I recommend to write something like "The Papathoma Tsunami Vulnerability Assessment (PTVA)..." in some place in the abstract. In some places it is written PTVA but in other PVTA. Please check.

It would be necessary to check the terms related to tsunami inundation. The international scientific community uses words such as Inundation height, Flow depth (or inundation depth) and Runup. The authors use terms such as flood height, inundation height, flood depth, water depth among others in different contexts, which is very confusing.

Section 3.2. It is not clear whether the "flood scenario" is a map of inundation height or flow depth. It would be necessary to explain better how the map was obtained. It is mentioned that 24 inundation height measurements were obtained during the field survey, which were combined with SERNAGEOMIN data. But the latter has 18 flow depth measurements. How did you obtained 266 points?. In addition, did you use interpolation? What variable was interpolated, inundation height or flow depth? which method was used for interpolation?. What kind of DTM model was used? Which was the resolution?

sections 4 and 5 should be part of a section called "Results", while section 6 and 7 should be part of a "Discussion". However, the dicussion should be extended. Even though the Introduction shows several papers as literature review on the development and application of PTVA models, the descussion is limited to the current results only.

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