

Reviewer #1:

General comment: the paper deals with an interesting topic (a liquefaction triggering map for Italy) and is generally well written. I think that the paper is important from a technical point of view. Further comments are reported below:

- It could be useful to define liquefaction induced by earthquakes.
As suggested, we have added the definition of “liquefaction” at the beginning of the Introduction.
- I suggest adding further information regarding liquefaction phenomena in Italy.
On line 53, we have added the following sentence: “According to the Italian Catalogue of Earthquake-Induced Ground Failures – CEDIT (Martino et al., 2014; Caprari et al., 2018), more than 300 liquefaction events have occurred in Italy since 1000 A. D., the last of which are associated with the 2012 Emilia seismic sequence (e.g., Scognamiglio et al., 2012; Minarelli et al. 2022). Therefore, it is of paramount importance to define a map that classifies sites as a function of their liquefaction triggering potential”.
- Line 63. “Lime” should be replaced by “silt”.
As suggested, “lime” has been changed to “silt”
- Line 99. SS should be defined as the “soil stratigraphy amplification factor”. “Stratigraphy” should be added.
Following the suggestion, “soil amplification factor” has been changed to “stratigraphic amplification factor”, which is the terminology used by the Italian building code.
- Line 107. I think that Fig. 1 is interesting and should be better commented. For example, further considerations could be done on the fact that the highest values of SS are in Emilia Romagna where liquefaction occurred in 2012.
- *As suggested, on line 119, we have added the following sentence: “It is worth noting the highest values of Ss are concentrated in the Po Plain sedimentary basin where, as mentioned previously, several liquefaction phenomena were triggered during the 2012 Emilia seismic sequence (we refer the reader to the Discussion section for details on this area)”.*
- Line 116. M must be defined too.
M is defined on line 76 as “moment magnitude”.
- Line 135. Maybe “di” should be replaced by “of”.
The sentence “larger magnitudes control di hazard in areas” has been changed to “larger magnitudes control the hazard in areas”.