

Nat. Hazards Earth Syst. Sci. Discuss., referee comment RC1  
<https://doi.org/10.5194/nhess-2021-126-RC1>, 2021  
© Author(s) 2021. This work is distributed under  
the Creative Commons Attribution 4.0 License.

## Comment on nhess-2021-126

Anonymous Referee #1

---

Referee comment on "Occurrence of pressure-forced meteotsunami events in the eastern Yellow Sea during 2010–2019" by Myung-Seok Kim et al., Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2021-126-RC1>, 2021

---

This paper studied meteotsunamis in the eastern Yellow Sea, and proposed monitoring guidelines in this area. It is well-structured and the results are presented clearly. But it needs a major revision to be considered as a publication in NHESS journal. The authors need to include the analysis on the period of detected waves and the local resonance at the tidal gauges. Authors have written many sentences in a passive voice, and their claims and explanations sound weak.

### Major comments

One of the main characteristics of tsunami waves (including meteotsunamis) is the period of waves since the energy of a tsunami is due to its long period. This study only considered the maximum amplitude waves and did not analyze the period of the waves. The authors need to perform wavelet analysis or Fourier spectrum analysis, and consider peak-to-trough heights rather than maximum amplitudes to confirm meteotsunami cases.

Another important characteristic of meteotsunamis is the local amplification. The local factor can be decisive to forecast the severity of meteotsunamis in the eastern Yellow Sea since the coastline is long and complicated with many islands. The authors can improve this work if they include local factors.

- The authors studied the local behaviors of tidal gauges (shown in Figure 3), but chose the threshold of 15 cm for all the tidal gauges. Montserrat (2006) suggested 4-sigma and Dusek et al. (2019) suggested 6-sigma and 20 cm (peak-to-trough height) for choosing possible meteotsunami events. Please explain why the authors have chosen the 15 cm threshold.
- In Table 3 and Figure 11, the authors presented average amplitude and occurrence rate

to evaluate meteotsunami events. Damages on the coast can occur in a small area, and the occurrence rate can be small. Can these parameters represent the severity of meteotsunamis?

- In Table 4, authors proposed guidelines for meteotsunami monitoring. It is unclear why authors choose 30 % occurrence rate for extreme. The occurrence rate cannot be used to forecast events since the occurrence of meteotsunami can be detected after it has occurred.

#### Minor comments

L 14 unclear "It appears that the specific characteristics (intensity, occurrence rate, and propagation) of the pressure disturbance are in common on extreme meteotsunami events that are classified by applying the hazardous meteotsunami conditions among the 34 events."

L 25 "that dominant" -> that are dominant

L 25-26 remove "which are"

L 28 remove "as the first stage"

L34 remove "worldwide until recently"

L35 remove "most"

L36 "The meteotsunami event on March 31, 2007, was an event in which" -> On March 31st, 2007,

L40 "It was the event that occurred with the strongest intensity in the largest area of the meteotsunami events reported in the Yellow Sea so far" -> It is the strongest meteotsunami event reported in the Yellow Sea so far

L43 "This event suggests that the timing of meteotsunami occurrence is an important factor that can determine the level of human casualties." - This argument is vague, and the authors need to specify their assertion.

L50 remove "Overall"

L52 remove "besides the accident events"

L113 "calculation and threshold" -> calculating the threshold

L114 "which known"->which is known

L126 remove "was the meteotsunami event of accident since 2010, which"

L130-131 remove "In general... and"

L149 "We need to check .. as a meteotsunami" It is not clear why we need to find it.

L229-231 Two sentences are inconsistent. Authors explain the occurrence tendency, then claim that they are irregular. I think 10 years are too short to propose any tendency.

L314 "pattern, for example,"->pattern. For example,

L356 "specific year" -> "specific season"

L390-393 "Another pressure jump ... the west of Lat. A-C" What is the reference for the Greenspan resonance in this area?