The following are our response to the reviewer's specific comments.

**L167: Although the structures are categorised based on industries, it is relevant to mention the structure/building characteristics (steel, concrete, reinforced, components, heights, shapes, etc) specific to each industry in this study. The reviewer feels that the structure/building type in each industry is not clearly described, especially the structural components and physical features that help to sustain the tsunami impact. The common structural/physical features of structures in a specific industry should be assessed as in lines 374-387.**

Thank you for the highly relevant comment. We recognise and agree with the reviewer that the structural components and physical features determine the vulnerability of the industry to tsunami impacts. We have included in Table 2, some of the common infrastructure that can be found in each of these industries, as well as a brief description of common physical assets and construction types as per Lines 168-175 in the corrected manuscript. We hope our revision is satisfactory for the reviewer.

Corrected manuscript:
[Line 168-175] Buildings in port industries commonly include administrative offices, control and maintenance buildings, warehouses and cold storage. Industrial buildings are typically of steel or concrete construction. On the other hand, the types of port infrastructure are diverse - ranging from small transformers to large loading cranes. Some common infrastructure found in each industry are listed in Table 2, adapted from the descriptions provided by the AIR Construction and Occupancy Class Codes (AIR Worldwide, 2019). Because of their diversity, port infrastructure vary widely in their construction and unlike buildings, it is extremely challenging to classify them according to their construction nature. It is interesting to note, however, that several industrial infrastructure are installed in support structures or housed in buildings. In the petrochemical industry, for example, oil and gas are commonly stored in steel or concrete silos and tanks.

Refer to Table 2 in Line 177 and in the Appendix.

**L175: Since this study uses the maximum inundation depth as the intensity measure, is there any evidence in the literature showing the link between damage to structures and the maximum inundation depth?**

We thank you for the opportunity to consider this question. There has not been a consensus on which parameters or rather tsunami intensity measure (TIM) provides the best explanation for damage. There are a number of papers in literature that have evaluated the relative influence of different parameters on building damage (e.g. Macabuag et al., 2016; Song et al., 2017). We are aware that damage to structures are attributed to a combination of many factors and not just inundation depth alone.

Maximum inundation depths are one of the common measures of tsunami damage in literature (e.g. Leone et al., 2011; Suppasri et al., 2013) as they are more easily estimated from field survey after tsunami events as compared to simulated flow values, as pointed out in Line 175-177 [Lines 183 – 185 in corrected manuscript]. For those reasons, we have therefore chosen to work with maximum inundation depths. In this manuscript, our main intention is to create a damage database with primary data. We welcome future users of the damage database to expand beyond using inundation depth as a measure of damage.

Should the reviewer's main concern be on using maximum values, we acknowledge the possibility of damage occurring before inundation reaches maximum depth. This was also addressed in Suppasri et al. (2019), where they found that the critical value for damage may not be at maximum

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| inundation depths or velocities. We are currently working on a second paper which follows up on the present work, where we evaluate the use of non-maximum inundation values of depth and velocity to explain the damage observed. |
| **L279: The distribution skewed towards the left or right?**<br><br>Thank you for the question. We have clarified this in the text: distribution skewed towards the right (i.e. with a long right tail and a mean to the right of the mode). |
| **L286: Possible reasons for the outliers?**<br><br>The outliers here refer to the inundation depths. The damage data (and hence inundation depths) were collected across different ports in the Tohoku region and therefore, the most plausible explanation for the outliers is that the areas covered in our dataset did not cover the missing depth range. We have removed the description on outliers in Fig.5 caption to avoid the confusion for readers (also pointed out by Reviewer 2), because it has little relevance to the rest of the manuscript.<br><br>Corrected manuscript:<br>[Line 292] Fig. 5. Histograms of each damage state. Distribution of damage data indicates non-normality and DS 1 accounts for the majority of the dataset. ~~Outliers exist in DS 3 and 4, with no damage states recorded for inundation values between 6 to 7.4 metres. Outliers are not removed from the model, as they are legitimate observations and possible outcomes.~~ |

We hope that our responses clarify your concerns. We thank you for your suggestions and for taking the time to review this manuscript. We are happy to address any other questions that you might have.

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## Appendix – Corrected Manuscript (Table)

**Table 2.** Proposed classification for port activities found in the Tohoku region.

| | **Industry type** | **Description of port activities** |
|---|---|---|
| Maritime industries | Cargo handling industry | Cargo handling services such as loading and unloading of ships (stevedoring) as well as the handling of cargo on shore.<br><br>**Typical infrastructure:** Loading and gantry cranes, storage yards, storage sheds, tanks, chillers and warehouses (buildings). |
| | Warehousing and distribution | Cold storage, warehousing and logistics support.<br><br>**Typical infrastructure: S**torage sheds, tanks and silos. |
| Non-maritime port-related industries | Chemical industry | Bulk chemical production e.g. alkane, propane and fertilisers.<br><br>**Typical infrastructure:** Distillation towers, tanks, silos, conveyors, pipes, pumps, compressors, reactors, vessels, wastewater treatment systems, chemical separation columns, substations and open frame structures. |
| | Construction materials industry | Concrete and cement manufacturing. Asphalt and wood processing.<br><br>**Typical infrastructure:** Rotary kiln/furnace, coal storage, grinders, mills, pre-heating towers, coolers, tanks, silos, conveyors, sorters and stackers. |
| | Energy-related industry | Coal power generation. Electric power generation and distribution.<br><br>**Typical infrastructure:** Mills, power plants, substations, transformers, chimneys, boilers, generators, cooling towers, turbines, condensers, pumps and electricity transmission towers. |
| | Food industry | Seafood processing and food packaging. Feed manufacturing.<br><br>**Typical infrastructure:** Ovens, cold storage (buildings), freeze dryers, tanks, mixers, conveyors, boilers and vessels. |
| | Manufacturing industry | Metal and alloy products. Plywood and paper products.<br><br>**Typical infrastructure:** Grinders/refiners, chimneys, furnaces, silos, tanks, screens, conveyors, cranes, mills and rollers. |
| | Petrochemical industry | Oil depots, reserves and refineries.<br><br>**Typical infrastructure:** Furnaces, distillation towers, crackers, compressors, condensers, vessels, tanks, silos, pipelines, |