

## Reviewer 1

*This manuscript aims to assess potential trends in hailstorm damage across Europe using climate modelling. The study aligns well with the scope of the journal, addressing a topic that is both timely and underexplored in previous studies. However, in my opinion the manuscript suffers from a notable methodological limitation: the main approach and results only loosely correspond to the stated objective of the study.*

*Specifically, the authors utilize modelling outcomes from the Detection and Attribution Model Intercomparison Project (DAMIP) to demonstrate that warming sea surface temperatures in the Mediterranean are predominantly attributable to anthropogenic influences. While it is justifiable that rising sea temperatures correlate with increased hailstorm activity, this connection is neither directly analyzed in the manuscript nor explored through more appropriate proxy variables, such as wet-bulb temperature or measures of convective instability. Sections 2 and 3 (Methodology and Results) bear no direct relationship to hailstorm trends, apart from the general hypothesis that continued warming will lead to an increase in hail-related damage.*

*While the current methodology requires refinement to align with the study's objectives, the authors have demonstrated a significant effort in leveraging DAMIP outcomes to explore anthropogenic influences on sea surface temperatures. Thus, despite my overall concerns, I am not suggesting rejection. Instead, I encourage the authors to undertake a major revision to address the above-mentioned issues, acknowledging that this will involve significant challenges. One possible path forward would be to incorporate more targeted hail-related variables into the methodology. Alternatively, the authors could expand their literature review on hail damage, employing more rigorous analytical techniques and relocating this analysis from the Introduction to the Methodology and Results sections.*

Comments from reviewer 1 led to large improvements in the revised manuscript, and were much appreciated by the authors.

We agree with the main comment from Reviewer 1. The original manuscript was designed as a Brief Communication, to contain a short analysis of the forcing of Mediterranean Sea temperatures, and how its ongoing warming has consequences for hail damages in Europe. However, the original Title, and other statements in the main text, suggested the study concerned hailstorms, and we apologise for creating confusion and misleading readers into expecting a study centred on European hailstorms.

The revised text is intended to clarify the aims of this study, and the analysis performed. It includes a full re-framing of the aims of the study in the Abstract and Introduction, and the manuscript has been re-structured with new sections 3 and 4, to make the distinction between the warming Mediterranean (Sect. 3), and consequences on severe weather (Sect. 4). A more detailed review of how hail damage is connected with the Mediterranean is also given in the new Section 4. This structure and content is aligned with the reviewer's suggested alternative path forward.

### **Specific & Minor Comments:**

*1) Lines 18 – 19: Please verify whether this is the appropriate format for referencing a website according to the journal's guidelines.*

Thanks, all references to websites in the revised text have been modified to meet journal guidelines.

*2) Some abbreviations appear unnecessary or unconventional, such as "R21" for Raupack et al. (2021), and "the Med" for the Mediterranean Sea.*

These abbreviations have been removed.

*3) Figure 1. It is unclear whether this figure represents the authors' original analysis or a direct visualization of data from other studies. If it is original, it should be moved to the Results section. If it is based on external data, the appropriate references must be included in the figure caption.*

This figure has become Figure 4 in the new Section 4 of the revised text, and external data are described in section 2, and referenced in the new caption.

*4) Lines 74 – 77. The above comment regarding clarification of data sources applies here as well.*

This text is relocated to lines 244-245 in the revised manuscript, and the data sources for both the damage-based and hazard-based estimates are clarified.

*5) Lines 106 – 107. Please specify which monthly-mean near-surface temperature diagnostics were used in this study to ensure transparency.*

The CMIP variable name 'tas' has been added to the revised text (line 54).

*6) Consider expanding Table 1 to include more detailed information about the modeling simulations, such as specific parameters, assumptions, or configurations.*

Three new columns of information have been added to Table 1: the vintage of the model, and the resolutions of their atmosphere and ocean components.

*7) Lines 152 – 153. The information about the red tick marks should also be included in the figure caption for clarity.*

The figure caption has been revised.