All of the co-authors would like to thank the referee for the time which he/she has allocated to the detailed revision of this paper, taking the time and effort to provide us with generally positive and constructive feedback. and the well-supported comments about our work. We sincerely value the work done in this review and we are grateful for this. We hope our responses and the improved version of the manuscript will meet the expectations.

Please, find below our point-to-point response with comments of the referee in **black** and our response in **blue**.

General comments

The authors of this study thank the reviewer for the general comments, which have highlighted numerous inaccuracies in our article. The main concern was the lack of a clear objective, which is evident upon rereading the article and has been noted by all reviewers. Initially, it seemed interesting to study both the ability of operational satellites to track oceanic extremes and the response of French coastlines to the exceptional summer of 2022. However, the study was conducted with the goal of characterizing the response of SSTs to multiple heat waves.
Therefore, the article has been revised to focus on this objective and determine the contribution of various atmospheric variables to this response. To achieve this, the structure of the paper has been revised to include necessary information for a more comprehensive study of ocean-atmosphere heat exchange interactions. Thereby, we conducted an analysis of the contribution of several atmospheric variables using a modelling approach. Hence, Materials & Methods, Results and Discussions have been largely modified.
In order to not start from scratch on the analysis of temperature data, we have kept the OSI SAF data and added details on comparison with the products used for climatology construction.

Minor comments

Across the manuscript, please clearly state how do you calculate anomalies. Are you comparing daily OSI/SAF SST values with monthly climatology? I couldn't get the point.
As mentioned by the reviewer, it is unclear how we calculated our anomalies. We, thus, provided more details about the process in the corresponding paragraph (section 2.3.3 on page 5).
We computed daily and monthly anomalies. For each, we compared daily (resp. monthly) ESA CCI product to the corresponding daily (resp. monthly) OSI SAF product. Thus we did not compare SST value that are on different time period.

Figures are too small. Please, make bigger figures.
Figures have been updated to be more readable.

Other comments

Lines 45-54 should not be included in the Introduction Section. A "Synoptic description/atmospheric characterization/..." section is needed and should go into greater detail.
A specific section has been added to describe the synoptic conditions.
P8, L.232 to P10, L250

Figures 1-2: I assume they are monthly anomalies although not stated. Maps are too small.
Figures have been modified. In fact, the anomalies shown are comparison of each heatwaves periods to the corresponding one of the 1991-2020 climatology.

Figure 3: Please, improve caption by stating the subdivisions are stated for the SST analysis
As suggested by the Reviewer.2 we decided to remove this Figure and to display the sub-areas in Figure 4. We included the following sentence in the legend:
"The English Channel (EC), the Bay of Biscaye (BB) and the North-western Mediterranean Sea (NWM) used in to analyse SST pattern throughout the 2022 meteorological summer are plotted on the subplot (a)."

Lines 69-71. Please, rewrite this sentence to improve the English language (missing verbs, concordance,...).
P3, L83-85.
"This area is directly influenced by Mistral and Tramontane regional winds which drive recurrent upwelling phenomena, making it of particular interest in comprehensive studies of the Mediterranean water cycle and its implications for climate studies (Drobinski et al., 2014; Ruti et al., 2016)"

Lines 76-77: Change "Both hourly and monthly were used" to "Both hourly and monthly data/values were used" (general remark: please, carefully check English grammar and spelling)
We finally removed this sentence as we included a specific paragraph to detail the construction of anomalies.

Line 142: Please change "3°CC"
Corrections made

Line 153: Reference to "Table 4" but this one does not exist. Maybe A1?
P13, L284. Correction has been made. There was a mismatch between references, here we intended to refer to the Figure 3.

Lines 160-164: Do these sentences refer to single point values? The 7.9ºC anomaly, is referred
to local or mean climatology? This is not clear for me. If this is compared to mean areal climatology this would not be the right way to compare daily values to climatology
This sentence aims to focalise on a single point and give further insights into the range of response and extremes values reached during the event that are hidden when analysing mean values.
However, the anomaly in question referred to the analysis of the local measured SSTs to the single point 1982-2011 climatology.
We propose the following corrected sentences:

P13, L294 – P13, L300.
"We investigated the local response to the marine heatwave in each basin by calculating the 1982-2011 daily climatology for every single point within each region. Our analysis revealed that the maximum recorded temperature was 30.8°C on August 4th

in the NWM area, 23.6°C on August 12th in the EC area, and 26.4°C on August 11th in the BB area. In terms of anomalies, the NWM basin exhibited the minimal anomaly of 2.2°C, whereas the EC and BB basins exhibited negative anomalies of -1.5°C and -2.1°C, respectively. The maximum anomalies were 7.9°C in NWM, 3°C in EC, and 3°C in BB, indicating the extensive response of the NWM basin and the range of sea surface temperature (SST) variability within and between each basin. The stronger SST variability in both BB and EC regions was notable."

Line 179: Which is the "whole domain"?
The whole domain refers to France.
P14, L319 – P14, L321.
"The mean total cloud cover anomaly over France reaches -17% while the North of France and specifically Brittany have undergone the maximum average anomaly of -37%"

Figure 7: Not stated but I understand that the maps show anomalies for the days in August 22 heatwave days, respect to 1991-2020 august monthly values? To the same period (31/07-13/08) for the 1991-2020? Please add this information in the figure caption and text.
We calculated the anomalies in respect to the corresponding period of the 1991-2020 climatology. This precision has been added in the figure caption and text.

Legend of Figure 5 on P.16
"Anomalies are compared to the same period in the 1991-2020 climatology."

Line 209: in response to the atmospheric heatwaves that affected France during the 2022 summer. Results and analysis are mostly centred in the August event, maybe not valid for the rest of summer.

Even if we centered part of our study on the August event, we also analysed the signal over the summer months.
We proposed the following sentence:

P22, L435-438. "Despite the significant lack of data, particularly in the early summer and in the EC area, we found a clear warming signal of SSTs during the summer of 2022 that was evident in all studied areas. All three areas exhibited positive SST anomalies throughout the summer, with record-breaking daily anomalies indicating that 2022 was one of the warmest summers in terms of SSTs, which also started early in the season."

Lines 209-213: "The strongest response was found 210 on the NWM basin (with a maximum average SST anomaly of 4.3°C) which is in line with observations (Bensoussan et al., 2019) and modeled evolution (Darmaraki et al., 2019b) confirming the Mediterranean Sea is a "hotspot" for climate change (Giorgi, 2006)". A single extreme event does not confirm the hotspot, although I agree with the sense of your assumption and that it is in line with the cited references. Please, rewrite this sentence.

We agree on this comment and on the fact that a single event does not prove that the Mediterranean Sea is a climate hotspot. To get more in line with the references and detail our thoughts we proposed this corrected sentence:

P.22, L449 – 455.
"The Mediterranean Sea is recognized as a "hotspot" for climate change (Giorgi, 2006), which will face warmer summer seasons (Adloff et al., 2015). Our findings support the idea that the occurrence of heatwaves throughout the summer would cause the

NWM Sea to respond strongly to these atmospheric forcings. Indeed, results indicate that even during non-heatwave periods, the SSTs in the NWM area were consistently warmer than the climatological average, even when the net heat flux was close to normal. These results are also in line with the with observations (Bensoussan et al., 2019) and modeled evolution (Darmaraki et al., 2019) of the continuous warming of the Mediterranean Sea."

Lines 227-244: These lines are not a discussion/conclusion but should be part of the introduction section. No work has been done regarding MHWs across the manuscript

We completely agree with this remark. In line with the general comment of Reviewer 1 and to a comment of Reviewer 2 that had the same questioning we decided to completely revised the Discussions/Conclusions section. The section integrates previous discussions with the addition of new features that are linked to the attribution results. The section starts P21, L429.

L246 : "To prevent the detection of anomalously warm SSTs". To prevent?
We propose the revised sentence:
P24, L506. « To anticipate the detection of anomalously warm SSTs »

Lines 250-256: Rephrase to improve reader understanding
As the section has been completed revised, this sentence is no longer present.