Response to Reviewer 1 (*Brief communication: How extreme was the thunderstorm rain in Vienna on 17 August 2024? A temporal and spatial analysis.*)

The manuscript provides an analysis of the rainfall event on 17 August 2024 in Vienna, Austria. To assess the extremeness of the event two datasets have been used: Rain gauge data from weather stations with long records but limited spatial representativeness and the radar-based INCA dataset with spatial coverage but short time series. Both datasets revealed that the event on 17 August 2024 was extraordinary with a rainfall of 107 mm/2h and return periods in the range of several 100 years.

The study fits in the scope of the brief communication format of NHESS. It is well written, the goal and methods are clearly explained and the results are easy to follow and well illustrated. I recommend publishing the manuscript after addressing the following remarks:

We thank you for your insightful comments and we would like to address your discussion points and suggestions below.

P.3, L.54: What would happen in the unlikely case of an event around midnight? Is the independence of events still guaranteed?
As you mention, this case is extremely rare due to the pronounced diurnal cycle of thunderstorm activity. However, we still account for it by selecting only the higher 2-hour maximum if an event occurs in the two hours around midnight.

P.3, L.63: Isn't the INCA dataset also shorter than 25 years (2004-2023)? Why were annual maxima used instead of POT?
Thank you for your remark. We agree that this approach was inconsistent and updated the analysis. We now use a peak over threshold method for all time series (INCA and station-based analysis). For each time series, we selected the $k * nyear$ largest precipitation sums, where k is 3 in our case, and $nyear$ is the number of available years of the specific time series. Additionally, the analysis is now based on a regional frequency analysis approach. For further details, please see our comments to Reviewer 2.

P.3, L.68: Please explain the abbreviation HRV, because it is used here for the first time.
We added "High-Resolution Visible" to explain the abbreviation.

P.3, L.72: I guess, "trough" is meant here instead of "through"?
Thank you, this typo is corrected.

P.4, L.94: Inner Stadt may not be clear to a read who isn't familiar with the city of Vienna. Maybe the authors could explain a bit more about the location.
We added that Innere Stadt is a weather station in the city center about 5 km to the southeast of Hohe Warte.

For our updated estimates, this would yield a return period of about 520 years instead of 700 years if the year 2024 is left out.

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The 25 % and 75 % percentile were added to Fig. 1.