

The authors present a well-written, clearly structured paper on the usability of ESWD data with respect to hail events. Complementing previous publications, the question is addressed whether an extension of the data base over a longer period of time and to data with a lower quality level leads to comparable results. The core statement that a homogeneous basis for hail climatology has only been achieved over the last 20 years is clearly shown. The paper convinces with the evaluation regarding the relation of hail days and hail events, which can be well used to analyze national and temporal inhomogeneities in the hail reports of ESWD, which is well shown by the hail data from Poland before 1955.

Thank you for your kind words on our manuscript. Also, thank you for taking the time to provide comments that will improve our manuscript.

One comment is directed to the better elaboration of this result in Section 7. It would be desirable if the data from Poland between 1947 and 1955 could be more clearly contrasted with those of more recent reports, in order to discuss indications of data inhomogeneities and doubtful entries for later investigations. In particular, these are figures of the seasonal distribution of hail events, the distribution of maximum hail diameter, and the time of day of the reports. In addition, the discussion of the results may be more open: While climatological trends may be considered as a possible but unlikely reason, there is no mention of the possibility of spurious entries that nevertheless meet the quality criteria. Data originating in official documents such as weather service yearbooks have a higher probability of receiving a higher quality level than reports originating from other sources. In the case in question, the data originated exclusively from the Stalin era, during which the Polish agricultural industry faced repression if it failed to meet ambitious agricultural aims. While the entries during this period provide little information on the weather events themselves, they almost exclusively contain very accurate estimates of losses for agricultural products. Although this investigation is beyond the scope of this paper, an open-ended discussion in this direction would be desirable with the caveat that historical data must be critically evaluated.

Thank you for this information. Are there any citations to this information? We have added more information about this data from Igor Laskowski. Specifically:

We know the addition of this data in the ESWD was due to Igor Laskowski who reports: “those reports were based on annual records collected by a Polish National Institute of Meteorology founded in 1919, now Institute of Meteorology and Hydrology - National Research Institute (<https://imgw.pl/instytut/historia>). The data was collected via hail questionnaires, which provided information on the size of the hail (vetch-sized, pea-sized, broad bean-sized, hazelnut-sized, walnut-sized, pigeon egg-sized, hen egg-sized and goose egg-sized) and also details about time of its occurrence, storm direction and the size of the expected yield decrease (in percent). The questionnaires were filled in both by agricultural correspondents of the Polish Central Statistical Office (whose number was growing larger, especially in the [19]50s) and existing insurance companies which provided hail insurance at this time. Those records also contain observations of hail reported by observers at meteorological stations.” At the time of this study, data from yearbooks from 1930–1937 and 1946–1955 had been added.

Apart from that, there are only a few minor comments. In section 7 results of the paper on hail reports at Polish weather stations are compared with those of the present paper. However, it is not written whether the criteria for large hail are the same. Thus, together with the large differences in the hail climatology, the question arises whether large hail is compared with sleet here. This possibility should be discussed.

The size of the hail in Poland is reported, and only large hail is included in this climatology. Because there is the possibility of winter ice being included, we added this sentence to the manuscript: “Although these results may indicate a cool-season preference for hail, there is

the possibility that ice pellets or graupel might have been classified as hail (e.g., Punge and Kunz 2018).”

Line 36: First supercell on July 27 and second one on July 28? Please check in ESWD

We cite only 28 July as two supercells formed within a small vicinity and which both produced hailstones of 10+ cm. In contrast, the storm on 27 July produced hailstones of only 7.5 cm. Although much damage was caused by both these events, we only cite one for conciseness. Readers may refer to the cited paper to learn more about this specific event. No change to the manuscript.

Line 85: In recent years, ESSL also developed an mobile phone app to report severe weather (EWOB)

Yes, we have added a new sentence: “Since December 2015, reports have also been collected via ESSL’s European Weather Observer app (Groenemeijer et al. 2017).”

Line 165: The regression lines are not visible in figure 2.

Thank you. We have added those regression lines in the revised manuscript.

Line 169: Numbers with plural -s instead of “number”?

Here, we refer to the period of May–July as a single period (as we do with the cool-season months of October–March). So, singular is the correct form. No change to the manuscript.

Figure 7: You may consider to extent the data basis to years before 2000 to show the time of stabilization mentioned in lines 239 and 240.

In fact, only a few figures in the manuscript (Figs. 1, 2, 12, and 13) show data before 2000. The reason for choosing to display the data since 2000 is clear from Figure 1. The number of reports increases substantially after 2000. Thus, unless our purpose was to show the time series of Poland data over a longer period in Figs. 12 and 13 because that is the period of interest, we prefer to limit our graphics to those with the most data (i.e., since 2000). No change to the manuscript.

Line 249: “suggests that the entries that the average hail size is” Delete “that the entries” or “that the average”.

Agreed. This has been amended.

Figure 8: “Two red dots represent likely data-entry errors”: The red dots are not red in the figure.

We have changed the figure caption to “pink”.

Line 302: “would imply” instead of “would implies”?

Yes, amended.

Lines 302 and 303: “except for Germany which has a much greater number of reports proportional to the number of days.” And Poland as well according to the graph?

Yes, we agree. We have added "and Poland".