We would like to thank Anonymous referee #1 for his/her positive and insightful comments on the manuscript. We have carefully considered and addressed all of the comments in the following. The original reviewers' comments are in italics, while our response is in plain text.

The aim of the manuscript is to evaluate the INCA precipitation product. Therefore, the reader can use this study to decide whether INCA is an effective product of high-resolution precipitation for their needs. The authors, though, never clearly arrive at a conclusion about this (except for the last sentence: "Careful consideration must be taken when using merged rain-gauge–radar products, especially in extreme events"). Maybe there should be a discussion section or at least a paragraph where the authors can comment on the evaluation of the INCA product in comparison to other products, and, if possible, radar-rain-gauge blended ones. What have other studies presented in terms of rainfall products performance in Austria or other regions with similar topographic/climatic characteristics? What do these results mean for the INCA performance? Is the model reliable, or other approaches should be preferred?

As described in the manuscript, there are other studies in this area evaluating precipitation products. However, these studies have been done for shorter time periods (mostly using data before 2015) and different spatial and temporal resolutions. So, a direct quantitative comparison with those studies may not be reliable.
A paragraph will be added at the end of the results section to mention two studies and the INCA performance as below.

Compared to the rapid-INCA product (Kann et al., 2015), the INCA analysis product performs similarly in 2011. For the IMERG products (O et al., 2017), these products underestimate heavy precipitation during 2014-2015, while INCA generally overestimates extremes. One should note that these results may not be entirely comparable since the temporal and spatial resolution of IMERG products are coarser than the INCA analysis product. In general, the INCA analysis product is reliable for hydrological purposes, considering it is a real-time operational product with high temporal and spatial resolutions. Also, the results show that an improvement in the INCA analysis product is taking place. However, the INCA analysis algorithm can be further improved, especially in extreme convective events.

The authors should also clearly emphasize the contribution of their study. Compared to previous evaluation studies conducted for INCA (Haiden et al., 2011; Kann et al., 2015; Kann and Haiden, 2011), what is the contribution of the present study?

We agree that more explanation is necessary for the contribution of this study. The following explanation will be added in the revised manuscript.
Haiden et al. (2011) presented the INCA analysis and nowcasting products. Their study verified these products for a summer month and a winter month in 2009 and 2010, respectively. Kann and Haiden (2011) assessed the INCA analysis product for four events in 2008 in four different

regions. Kann et al. (2015) evaluated the rapid-INCA products for the convective season of 2011 (April to September 2011) and four different events in 2011. All those studies are based on INCA data in short time periods before 2012.
However, the purpose of our study is to evaluate the INCA analysis product for 12 years (from 2007 to 2018) to show the changes in the INCA performance due to the new radar installations, improvements in the algorithm, and the addition of more stations to the INCA algorithm. The performance of INCA to estimate precipitation extremes is shown using 12 years of data. In addition, an event-based approach is implemented to extract all the individual events during these 12 years.

The abstract also does not include the main output of the manuscript, which is whether the INCA precipitation product is eventually a viable choice for hydrological models and decision-making in agriculture and economy (as stated in the beginning). The abstract is also a bit wordy, I think it can be written more concisely.

Thank you for your suggestion. Based on your comment, we will rewrite the abstract for the revised manuscript.

Lines 485-486: "We conclude that this overestimation is a result of systematic errors from newly installed radars"
Also, in lines 279-282: "From 2012 to 2014, INCA considerably overestimated precipitation in almost all grid cells, and the annual area-mean difference rose to almost 29 % in 2013... We interpret this as an error, introduced by the new radar, which was partly removed by the calibration with ZAMG station data."
Maybe I am missing soothing here but it is not clear in the manuscript whether this is the reason for overestimation. To be more specific, in Table B1 we can see that the radars were replaced on 10/2011, 10/2012, and 11/2013. If this is the reason for overestimation for the second period (2012-2014), why does overestimation also occur during the period 2007-2011? (I assume you have considered hydrological years (September to October)):

We agree with this comment. These sentences should be rewritten to "We conclude that the increase in the overestimation is a result of systematic errors from newly installed radars" and "We conclude that the increase in overestimation in the second period is a result of systematic errors from newly installed radars."

Line 486: "This overestimation was partly removed in the INCA algorithm using reference gauges."
Do you mean that there was no overestimation in the cells near the reference gauge? Maybe a clearer sentence should replace this one.

The overestimation is lower in the cells near the reference gauges. Since the weight of the gauge estimation decreases with increasing distance from the gauge in the INCA algorithm, we concluded that this overestimation is mostly due to radar estimates and can be partly removed closer to the gauges. We agree that our formulation was a bit unclear and we will change the sentence in the revision.

Lines 503-505: "In general, INCA has been improving in detecting and estimating precipitation. However, there are errors due to radar estimates and the algorithm for merging radar and rain gauges, which can negatively affect the INCA analysis product."
Maybe it is better the conclusions to be understood without the need to read the whole manuscript, you could explain, how is INCA being improved and which are the specific errors.

We agree with this comment, and we will rewrite this in the revised manuscript.

Some references are needed in certain sections. Specifically, lines 36-44, 193-195.

We agree with this comment, and we will add references in the revised manuscript.

Consider removing the word "very" from the manuscript title. It seems redundant.

We agree with this comment, and we will correct this in the final manuscript.

Minor suggestions:
• Lines 82-84: Can you give more details about the stations, e.g., average altitude, and also give details about the types of stations presented in Figure 1 in the text. They are not mentioned in the manuscript.

We agree that there should be more explanation regarding the stations. We will add more explanations in the revised manuscript.

• Table 1: Consider adding a column with the values which indicate a satisfactory accuracy for each metric

We will add more explanations about the accuracies of these metrics.

• Avoid creating one-sentence paragraphs throughout the manuscript

We have carefully checked this and there will be no more one-sentence paragraph in the revised manuscript.

• Line 351: change to: "exceeding the 99th quantile"

We agree with this comment, and we will correct this in the final manuscript.

• Lines 429 and 439: It is a bit informal to start the paragraphs in this way

We agree with this comment, and we will correct it in the final manuscript.

• *Lines 490-491: Consider changing the sentence to: "This could be because the INCA algorithm removes false precipitation events and unintentionally..."*

We agree with this comment and we will correct this in the final manuscript.

References:

Haiden, T., Kann, A., Wittmann, C., Pistotnik, G., Bica, B., Gruber, C., 2011. The Integrated Nowcasting through Comprehensive Analysis (INCA) System and Its Validation over the Eastern Alpine Region. Weather and Forecasting 26, 166–183. https://doi.org/10.1175/2010WAF2222451.1

Kann, A., Haiden, T., 2011. INCA – an operational nowcasting system for hydrology and other applications. Weather and Forecasting 26, 10.

Kann, A., Meirold-Mautner, I., Schmid, F., Kirchengast, G., Fuchsberger, J., Meyer, V., Tüchler, L., Bica, B., 2015. Evaluation of high-resolution precipitation analyses using a dense station network. Hydrol. Earth Syst. Sci. 19, 1547–1559. https://doi.org/10.5194/hess-19-1547-2015