

Public justification (visible to the public if the article is accepted and published):

Dear authors,

From my own reading of the revised version and of the responses to the reviewers, I think that the manuscript can be accepted for publication in AMT, conditioned on a few minor points listed below that should be addressed.

P.4, l.91: km -> km²

Reply: Thank you for pointing out the issue; we have made the necessary corrections promptly.

P.4, l.100-102: the choice of the interval to normalize the reflectivity values should be better explained: how sensitive is the outcome of the reconstruction to those selected minimum and maximum values (10 and 75 dBZ)? Using a threshold lower than 10 dBZ would lead to more data available to train the model (so possibly better results) but at the same time would lead to larger areas to reconstruct (so possibly larger error). This trade-off should be discussed and the choice of 10 dBZ better justified. By the way 75 dBZ likely correspond to hail, not rainfall...

Reply: Thank you for this valuable comment. The primary objective of this study is to develop an intelligent model capable of accurately reconstructing missing radar echo data in mosaic products. In weather forecasting and severe convective monitoring, radar reflectivity values associated with precipitation—including hazardous phenomena such as hail—typically range from 10 to 75 dBZ. The lower threshold of 10 dBZ is deliberately selected to exclude weak or non-precipitating echoes, thereby enhancing the model's focus on meteorologically significant signals. While lowering this threshold could preserve additional weak-echo information, it would also introduce extensive low-intensity regions during reconstruction—regions that are not of concern in meteorological service due to their negligible precipitation rates and minimal societal impact. Conversely, the upper threshold of 75 dBZ encompasses virtually all intense convective echoes, including hail—which is also the meteorological target of this study. Echoes exceeding 75 dBZ are exceptionally rare in

practice and can be safely disregarded. Accordingly, the normalization procedure has been refined to explicitly align with these operational constraints and scientific objectives (from line 100 to 105).

P.24-25: It is nice to have added Figure 9 (with real missing data), but I did not find where it was mentioned in the text... Add a sentence somewhere (Section ?) referring to and commenting about Figure 9.

Reply: Thank you for your question. We conducted a qualitative analysis based on real missing radar data, in order to further illustrate the applicability of the proposed method. The relevant discussion has been added in Section 5 (from line 480 to 485).

Additional private note (visible to authors and reviewers only):

Dear authors,

Sorry for the delay in taking my decision, I was hoping to have a feedback from Reviewer 2 but nothing in the end... I think the manuscript is meeting AMT standards, there are just a few points to clarify, as explained in my comments.

Best regards,

Alexis Berne