

Reviewer 2: The authors appreciate the careful review and comments of the reviewer. A detailed answer to each one of the comments follows. All modifications in the manuscript have been highlighted in red.

Review of “Refractivity Observations from Radar Phase Measurements: the 22 May 2002 Dryline Case during IHOP Project” by López et al.

In this paper, the authors present the analysis of a time series of radar-based refractivity maps obtained during a dryline occurred during the IHOP project in May 2022. I found the paper interesting, and I have no specific concerns about the methodology and the analysis of the results. I thus consider that the paper can be accepted with only minor revision.

Minor comments

Line 101. Please, start the sentence with “For this case, results also ...”

As suggested by the reviewer, the sentence has been modified.

Line 119. Please, change “... refractivity maps using the kriging interpolation method are obtained” to “... refractivity maps using the kriging interpolation method can be obtained”.

Considering the reviewer’s comment, this sentence has been corrected.

Line 125. Please, change “... the discussion of this work is ...” to “... the discussion of the study and some concluding remarks are presented in Section 5.”.

In view of this comment, the proposed sentence has been added to the manuscript.

Line 137. Please, remove “is” and let just “as shown in Figure 1b”.

Thank you for the correction.

Line 154. Please, change “kelvins” to “kelvin”.

Thank you for the correction.

Please, confirm if “15 June 2002” is correct in the caption of Table 3 or if the correct is 25 June 2002 as stated in Lines 131 and 221.

Thank you for the correction. The correct date is 25 June 2002.

Line 288. Please, confirm if “15 June 2002” is correct.

Thank you for the correction. The correct date is 25 June 2002.

Please, insert “UTC” after the hour in Figures 5(a)-(l).

The correction has been done.

Please, insert the year 2002 in the end of the Figure 6 caption.

The year has been inserted.

Line 291. I suggest changing the subsection title to “Discussion and concluding remarks”.

Authors agree with the reviewer. The section title has been modified.

Line 296. Please, remove “in” and let just “... radar refractivity maps presented here ...”.

The correction has been done.

Lines 317-319. I understand that some results may be not interesting to discuss in the present study, but I guess that this is an interesting result to be shown in section 4 and will enrich the analysis, mainly because the authors mentioned the importance of such a result in lines 320-322. However, it is just a suggestion.

Thank you for your comment. We have added a figure that shows the stated non-significant difference. The text in the paper now reads as:

In this paper, the ERA5 reanalysis dataset is used. Alternatively, data from the weather stations could have been used. Results show no significant differences when using the weather station data or the ERA5 dataset, see Fig. 9. This fact is important given that some national meteorological services have stated that they will no longer expand their ground-based weather station networks due to their high cost of deployment and maintenance [31].