Review of manuscript: validation of satellite OPEMW precipitation product with ground-based weather radar and rain gauge networks.

The paper verifies the satellite based QPE against a) radar rainfall and b) rain gauges over a 1 year period over Italy.

General

1. Several language errors are made. Some will be listed in my review, but not all. In general a good English editor is required for this paper.
2. Several sentences lose their meaning due to being too long.

ABSTRACT

Page1: line 20

..has been running… for two years…

Page 1: line 21

..products as input to operational…

Page1: line 23

…observations consisting of 20 weather radar systems …

Page 1: line 25

… a data set covering one year…

Page 1: lines 24-27 and Page 2 lines 1-3 are all one sentence. Rephrase, too long.

Page 2 line 6-10 – all one sentence, rephrase, too long.

Page 2: line 8

Omit “a sort of”

Perhaps too much detail is given in the abstract and a more general overview would be good enough, without the detailed values.

INTRODUCTION

Page 2: line 26

Low Earth Orbit (all caps)

Page 3: lines 3-7 sentence too long. Rephrase.

Page 3: line 13

… by comparing the satellite estimation against…

DATA SET

Page 4: line 7

Language use not clear "rather technical then functional"

Page 4: line 10

At Nadir, the footprint of the instrument…

Page 4: line 12

FOVs have an ellipsoidal shape..

Page 4: line 13

Start new sentence with: The first axis refers to..

Page 5: line 21

More information is needed on how the radar rainfall is calculated (which algorithm is used, which ZR relationship, is dBZ or CAPPI used for calculation, etc.)

Page 5: line 26

Techniques are being tested…

Page 6: line 3

Which belong to independent…

DPC was recently appointed…

Page 6: line 8

Omit "some"

Are point values of the gauges used or an interpolated field?

METHODOLOGY

Page 6: line 20

“was processed for searching space-time colocation”… language use not clear

Page 7: line 2-3

Unless the system failed…

Page 7: lines 4-7

Long sentence, without clear meaning. Rephrase.

Page 7: lines 10 and 11

Omit “some”

Lines 11-13 – meaning not clear, the smoothing procedure should be described better.

Page 7: lines 15-30

Different possible errors are listed for satellite rainfall, radar rainfall as well as gauges, but it is not clear how these were dealt with in order to ensure a good quality rainfall data. Attenuation is mentioned in the summary and conclusions, so can the assumption be made that this is not taken care of in the radar rainfall field? Maximum thresholds are mentioned, but that does not take care of all the possible errors.

This paragraph needs a lot more detail since all the statistical evaluation which is done can be contaminated if the “truth” fields (radar rainfall and rain gauges) are not properly quality controlled.

Page 8: line 2

The elimination system described is not clear.

Page 8 lines 12 and further

The terminology “rainy and not rainy” is not correct.

The threshold is not clear – is it >=1 mm/h or > 0mm/h for pixels with rain?

Line 14: “These include” – what is these?

Line 17: remind not the correct English

Line 21: omit “even more stringent”

Page 9: line 4-5

Meaning not clear.

RESULTS

Page 9: Line 11

The 15 and/or 16 mm/h bins are not clear, a better motivation is needed.

Figure 4 needs more detail on the Y-axis. The interpretation is not clear.

Page 9: line 25

Accuracy of 98% for both..

Accuracy is not a reliable score to use due to statistical reasons, but also due to the QC approach which was described in paragraph 3.2.

Page 9: line 28-29

HHS is incorrect, assume HSS is meant.

..HSS ranging from 0.42 to 0.45 and ETS ranging from 0.27 to 0.29…

Page 9 lines 27-30 and Page 10 lines 1. Sentence too long.

Page 10: line 1

“FB is fairly close to unity”? – I don’t see that.

Page 10 line 13:

Figure 5 – Captions are not clear on which line is presenting which variable.

Page 10: line 18

…As the rainfall intensity becomes more significant…

Page 10: 21-31

Motivate why 1mm/h bins were chosen and not perhaps 2 or 5 mm/h. 1 mm/h is a very fine distinction to make for remotely sensed “observations” (radar) or estimates (satellites).

Page 11: lines 12-14

Sentence too long.

Page 12: line 15

Indicate Sicily on the map in Figure 10.

Page 12: line 31

“std” should be written out

I would suggest that the titles of the different subsections also mention what is evaluated (i.e. … to evaluate area/intensity) and not just how (i.e. dichotomous statistical assessment)

SUMMARY AND CONCLUSIONS

Page 13: line 7-10

Sentence too long

Page 13: line 15

FB score is “a bit” larger than unity – omit “a bit”

Page 13: line 21

Start new paragraph here.

Page 14: line 1

Omit “sort of”

Page 14: line 2

While the scatter plot..

Page 14: line 3

Due to the low number of cases with rainfall higher than 10mm/h…

Page 14: line 4

“std” – write out

Page 13-14

The summary and conclusions paragraph is confusing to me and not well written. Clearer distinction should be made on what was evaluated (intensity, area etc.) by which methodology, together with the outcome. Sometimes the results seem to be contradicting… due to small difference not clearly identified. A clear conclusion is lacking. A stronger statement needs to be made and then also exactly what will/can be addressed in “future”/ongoing work.