

Dear Reviewer#1,

we thank you for your comments and the valuable suggestions on our manuscript. You will find below the answers to your comments. Concerning the location of figures and tables, we will definitely rearrange them close to the text where they are mentioned, following your suggestion. Moreover, we will indent all equations in the text and provide more informative captions. Finally, we appreciate your accuracy in reading the manuscript; we will fix all the spelling and grammar corrections you pointed out directly on the revised version of the manuscript.

- **Figure 1: Case study area.** Panel (a) shows the Lambro catchment, the partitioning in 15 sub-basins (HRUs), and the position of the sensors, while panel (b) reports the scheme of HRU interaction. I suggest adding "in a network". Also, referring to Fig. 1, see line 230, where this image is first referred to – above 100 lines of text.

Thank you, we will add "in the network". Moreover, we may split Figure 1 into two figures and move the scheme of HRU interaction close to line 230.

- **Figure 3: There are no 30 Gz data mentioned in the text [see lines 106 - 108] nor shown on the figure please move this Figure 3.**

Our CML network did not have links with frequency around 30 GHz. We will disregard the corresponding curve in the figure.

- **288:... On the other side, CMLs tend to return higher estimates than RGs during High rain rate events (circles), even though the trend is not as evident.**

Comment: the 4 rain-rates are very nearly the same ...

We agree with you, this comment is improper. We will disregard such sentence.

- **301: We therefore focused on the CML hourly wet-dry (see Sec. 2) 'please see Section 2' - but note that it is 170 lines above (I eventually found it at line129!) where it should read: 'An hour is considered dry when the detected rainfall depth is lower than 1 mm and wet otherwise.**

As you suggest, it could be useful to recall the definition of wet-dry hours here, adding the following sentence in line 302:

We recall that we defined as dry those hours in which the detected rainfall depth is lower than 1 mm and viceversa for wet hours.

- **305 , whereas the occurrence of a false positive is relatively rare in both cases. Comment: then you should junk data which are false negative - by the way, what is the proportion of false negative?**

We did not junk false negative as to make it possible to understand which is the impact of those false negative on the performances of the hydrological model, especially during *Low rain rate* events. Moreover, if we disregarded false negative we should replace with RG data, making the two sets of data not independent and therefore their comparison would be unfair.

The box plots are referred to the proportion of hours identified as false negative, as well as false positive, with respect to the total amount of hours in the events. The two box plots on the left report the distribution of the percentages related to the 8 *High rain rate* events for each HRU (8 events \times 15 HRUs = 120 values) while the two box plots on the right refer to the percentages of the 4 *Low rain rate* events, again in each HRU (4 events \times 15 HRUs = 60 values). For example, the maximum observed percentage of false negative is 60%, which refers to event 7 (*Low rain rate* event) and HRU 2.

- **Figure 6. Relative difference ΔE between CML and RG hourly rain depths against RG rain depths. X-axis has a logarithmic scale.**

- **What is the lowest rain depth? I guess 1... Also, what is the meaning of ΔE being -1.**
- **You should make your figure captions more informative. Also, it's difficult for the reader the way the text is presented relative to the figures, as this mismatch causes the reader to hunt desperately for the linkage – please fix this irritation. I have got around the problem by splitting the screen of the pdf - but it's a pain!**

Yes, the lowest rain depth is 1 mm as we set to 0 all the values lower than 1 mm.

Moreover, ΔE is defined as:

$$\Delta E = \frac{R_{CML} - R_{RG}}{R_{RG}}. \quad (1)$$

So, when the CML estimate, R_{CML} , is 0, the formula reduces to $\Delta E = -\frac{R_{RG}}{R_{RG}} = -1$. We hence obtain $\Delta E = -1$ in the case of false negative, and for this we observe in Figure 6 a high density of values corresponding to $\Delta E = -1$. We will explicitly add all these clarifications in the revised manuscript and in the caption. Please, note that we intend to replace Figure 6 with Figure RC1.1, as suggested by Reviewer 2, to make it clearer.

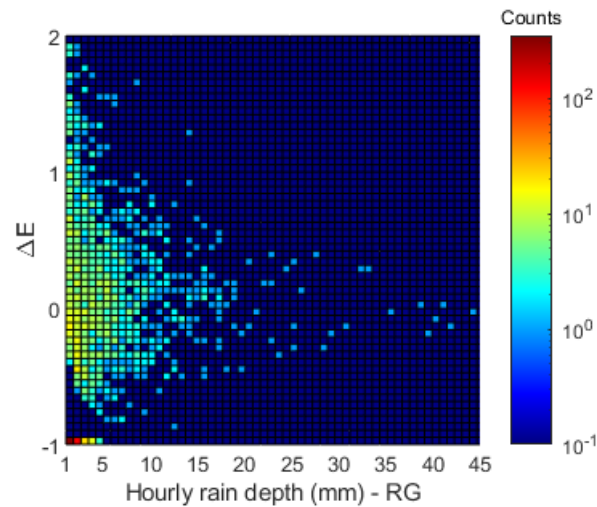


Figure RC1.1: 2D histogram of hourly rain depths and ΔE . The colour of each equally spaced 2D bin represents its height, which is the count of data falling in the bin. Note that the scale bar has a logarithmic scale and the dark blue bins correspond to 0 counts. Values of ΔE equal to -1 represent false negative hours.

- **Figure 8. Box plots of ΔE for the 12 storm events grouped by HRU. What is the range of the box plots? the usual ?** Minimum (Q0or 0th percentile): the lowest data point excluding any outliers. Maximum (Q4or 100th percentile): the largest data point excluding any outliers. Median (Q2or 50th percentile): the middle value of the dataset. First quartile (Q1or 25th percentile): also known as the lower quartile $qn(0.25)$, is the median of the lower half of the dataset. Third quartile (Q3or 75th percentile): also known as the upper quartile $qn(0.75)$, is the median of the upper half of the dataset.

Yes, the ranges of the box plots are those reported by you. We will clarify it in all the figures' captions were box plots are present.

- **6 Conclusions**

In the conclusion, as well as I suggested in the introduction, please reintroduce the full meaning of the acronyms as many readers might skip, via figures to the conclusion...

We agree with your suggestion, and we will reintroduce the meaning of the acronyms.

- **403: The hydrographs simulated by the hydrological model highlight better performances in terms of NSE and Dv.**

Insert before Dv: 'the relative error on flow volume,'

We will fix it directly in the revised manuscript.