

## ***Interactive comment on “Intense precipitation events in the Central range of the Iberian Peninsula” by Manuel Mora García et al.***

### **Anonymous Referee #3**

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#### General Comments

This contribution deals with an important topic and contains potentially interesting elements. However some parts are not clearly explained and there are a few formal errors to be corrected. I also recommend a bit more discussion on the results with recent studies.

For example I suggest that in the introduction authors could put into context the region studied with recent article by Alvarez-Rodriguez et al (2007) - see references below - and the results, at least the case studies described, could be compared with the absolute maximum precipitation fit lines for different time periods given by Gonzalez and Bech (2017), either for Spain or for specific Spanish provinces.

C1

I include below specific comments and additional suggestions.

#### Specific Comments

1. Page 2, line 3. Prat and Barros (2010): reference not found in references section. Please check and add it.
2. Page 4, line 12. Suggest: comparable to convective -> comparable to those from convective origin
3. Page 4, lines 14 & 15 (and elsewhere in the text). Check English: regimen -> regime
4. Page 4, line 21 (and elsewhere). Please check units of the amount given (4.7).
5. Page 4, line 25. m.a.s.l. -> m a.s.l.
6. Page 4, line 31. Please clarify the selection method of the events. Is it 100 mm in 24h or during which period?
7. Page 5, line 6. Middle -> Medium
8. Page 5, line 7. interval. -> interval [remove "." before the URL in brackets]
9. Page 6, line 8. For consistency, please use Type in capital letters if you refer to a specific type (Type I, Type II, etc.) as in line 6.
10. Page 6, line 13. Suggest: static stability low and the mountain barrier narrow-> static stability is low and the mountain barrier is narrow
11. Page 6, line 14. This sentence is a bit confusing. What about: of the flow in the mountains -> of the flow perpendicular to the mountains ?
12. Page 6, line 14. I suggest: cause -> favour, because in fact it depends on the stability conditions
13. Page 7, line 1. I think additional decimal digits should be given for the Madrid sounding location.

C2

14. Page 7, line 2 (and elsewhere in the text). Suggest: remote-controlled station -> automatic [I do not think that being remote-controlled is relevant]
15. Page 7, line 17. Hickey, 2011: reference not listed in references section.
16. Page 11, Table 3 caption. indices along 27 -> indices along 26, 27 and 28
17. Page 11, Table 3 caption. Clarify in the caption which variables listed refer to 850hPa level.
18. Page 12, Table 1. Typo: Máximo -> Maximum (without accent)
19. Page 12, Table 1. Units should be given also for Vq mean.
20. Page 13, Table 3. Suggest adding more columns with the maximum precipitation in 24h and other periods such as 1h, 3h, 6h or 12h; I strongly recommend at least including the 24h; the 1h value may be useful to assess the convective character of the event. Values currently listed are difficult to compare as may correspond to different time periods.
21. Page 15, line 3, Figure 1 caption. show -> shown
22. Page 15, Figure 2 caption. Please add: Average fields -> Average fields for the episodes studied (listed in Table 1)
23. Page 15, Figure 3 caption. Average precipitation for which time period? All the event?
24. Page 15, Figure 4 caption. Suggest: units -> labelled in kt
25. Page 15, Figure 7 caption. Spatial -> Topographic
26. Page 15, Figure 8 caption. Doppler radar image -> Doppler radar wind (m/s) PPI image [you can expand PPI into Plan Position Indicator if preferred]
27. Figure 2. I suggest to improve the panels by removing the current titles above each panel (the labels a,b.. should suffice) and also by redrawing the legend bar to fit the

C3

width of each panel. This should allow a more compact and clear display.

28. Figure 3. Please improve the quality of the image (resolution, units in brackets).
29. Figure 4, Could it be possible to add a colour legend for the cloud top temperatures? Coldest values could be commented in the text.
30. Figure 6b. Please improve resolution.
31. Figure 7. Regarding the x-axis units labels note that you are using a dot "." which in English usually means decimal separator. Presumably the label 400.000 m means 400 km, does'nt it? Please check and make necessary corrections to avoid confusions.
32. Figure 8b. The star symbol seems to be wrongly placed - it is not at the centre of the PPI image - it seems to me it should be further south-west from the current position.

#### REFERENCES

- Alvarez-Rodriguez, J., Llasat, M. C., Estrela, T. (2017). Analysis of geographic and orographic influence in Spanish monthly precipitation. *International Journal of Climatology*. <http://dx.doi.org/10.1002/joc.5007>
- Gonzalez, S., Bech, J. (2017). Extreme point rainfall temporal scaling: a long term (1805–2014) regional and seasonal analysis in Spain. *International Journal of Climatology*. <http://dx.doi.org/10.1002/joc.5144>

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C4