Answer to reviewer #2

1. **The description of the ensemble is quite confusing to me. Throughout the paper, ensembles of 20 members and of 21 members are often mentioned (at page 2, lines 14 to 32; page 3, lines 30 to 32; page 6, lines 11 to 13; page 17, lines 9 & 10; etc.), but at the end I was not sure to have understood the difference between the two ensembles.**

   Sorry for not making a clear statement on the ensembles. We performed an ensemble forecast using the GFS 20 members + the control; that is why we stated 21 members. We used the WRF 21 simulations to force the hydrological model producing 21 members for the CHyM ensemble. Therefore, the two ensembles are:

   - *the WRF regional ensemble (forced by 20 GFS members + control)*
   - *the CHyM ensemble (forced by 21 WRF members).*

   We hope this clarifies this point. We will accordingly clarify this part in the revised version of the manuscript.

2. **The statistical description of the ensemble and of the results is very weak. Only few, very basic statistics are considered and they are defined in a rather cumbersome way (see technical comments # 31 & 32).**

   31. Page 8, lines 13 to 15. In the statistical literature, this is simply called the "ensemble standard deviation".

   32. Page 8, lines 19 & 18. In the statistical literature, this is simply known as the "coefficient of variation".

   We will make more robust the description of the ensemble and the discussion of the results by adding some statistical evaluation to objectively compare the ensemble with the observation. Thanks for the corrections: following your suggestion we changed the mean-related spread into ensemble standard deviation, *and accordingly we introduced the* coefficient of variation instead of the current definition.

3. **Section 3.2 "Ensemble precipitation time series" should be discussed in a more accurate way.**

   · I am sorry, but I think that the agreement between forecast and observations is not so exciting. In fact, I do not agree with the sentence "The meteorological ensemble well reproduces the event in terms of heavy precipitation area identification, as well as its onset and length" in the conclusions (Page 19, lines 21 & 22). A qualitative assessment would be more objective and the reader could decide whether the agreement is satisfactory or not.

   As already mentioned a detailed and accurate statistical evaluation of the ensemble forecast will be performed to achieve a more objective conclusion than the one presented.

   · The variability among ensemble members appears much smaller than the difference between ensemble mean and observations (Figure 6). This fact is not sufficiently considered, quantified and discussed in the text.

   We agree with you, sorry for not having properly considered this point. We will further discuss it in the revised version of the paper by considering also difference between ensemble mean of the Hydrological forecast and observations which appears larger than the variability among the ensemble members at most stations (Figure 14).

4. **Page 20, lines 7 to 15. These conclusions should be reinforced. After a first, possibly fast, reading, I asked myself: "what is the relevance of the proposed method, if it merely confirms the results of the methods already in use by the civil protection agency?". Instead, the added value of the proposed method should be better discussed.**

   Again, sorry for not been clear over the mentioned statement. The alert map (Fig. 9), that we used as as 'ground truth'. This map was issued in the morning of Nov 15 (i.e. the same day of the event) by the Civil Protection Agency (CPA). The map is initially built on the deterministic forecast and then updated using observations. Therefore, the methods already in use by the civil protection agency is based on the deterministic models: the hydrological forecast forced by the meteorological forecast. This method is a very useful tool, but with short outlook. The availability of a forecast product well in advance (i.e. at least the day before of the event) would allow the CPA to issue an alert map the day before. This can be achieved by using an ensemble forecast which, though at lower resolution, produces both a forecast for a longer lead time than the deterministic, and information on the probability of the forecasted event. We will accordingly improve the discussion of this point in the conclusions section.

Technical Points.
1. Ok done.
2. Ok
3. Ok
4. Ok, thanks
5. Ok done
6. Ok
7. Ok. Done
8. Ok we will rephrase
9. Ok, done
10. Ok, done
11. Ok, done
12. You are right, we substituted 'occur' with 'is expected'.
13. Ok we will add references.
14. We change lead time into outlook.
15. Ok we will do it
16. Ok, done
17. Ok, done
18. Ok, done
19. Ok, done
20. Ok, done
21. Ok, done
22. The GFS acronym has been introduced.
23. Ok, we will do it
24. Ok, we changed the sentence and we will add more details in the discussion
25. Ok, done
26. Ok, we changed the sentence
27. Ok, we will do it
28. We mean not presented in the figure and not discussed. We will change the sentence
29. Ok, done
30. Ok, done
31. Ok, done
32. Ok, done
33. Ok, done
34. Ok, we substitute this latter with the control simulation
35. Ok, done
36. Ok, we changed the verb
37. Ok, done
38. Ok, done
39. Ok, done
40. Ok, done
41. Ok, done
42. Ok, done
43. We will correct fig.1
44. We will correct fig. 2
45. We will correct fig. 6
46. We agree, we will assign a code to each simulation and we will correct the text.