EC1/ It is clear that 4 events do not constitute a sufficient database to generate statistically sound conclusions, from the start please clearly explain what you aim to achieve by studying only 4 events and exactly why you chose those 4 events (like you do in your response). Please also add more information on the suitability and/or limitations of the semi-distributed rainfall-runoff model rather than a fully-distributed approach in this context (Ref 1), and certainly present details on the catchment delineation you list in your response.

AC1: Both aspects (limitation of the dataset and semi-distributed model plus catchment delineation process) are discussed in the new version of the paper, as I anticipated in my responses to reviewers.

EC2/ Like practically all referees I also got confused with the notation of the sampling numbers and different resolutions. In your revision please make sure that these are very clearly and consistently used throughout the manuscript.

AC2: The authors strongly agree in changing the notation. The new notation is as follows:

L_D : rainfall decorrelation length

L_R : rainfall pixel size (=resolution)

L_C : catchment length

L_{RA} : runoff area length

L_S : sewer length

ED3/ Ref 2 raised two important points which you should engage with in the introduction. The first is the modelling approach to study sensitivity in circumstances where the validity of the approach itself (rainfall-runoff model) cannot be properly validated. Ref 4 also pointed out the fact that the runoff model has its own uncertainties. The second point is a warning about motivating this study with the issues of climate change leading to a potential increase in extremes. I share this viewpoint and encourage you to make sure that your thinking on the first point (as you outlined in the response) shows up prominently in the introduction and in discussing your results.

AC3 The authors agree with the points issued by Reviewers and Editor, the introduction and discussion of results have been adapted taking into account uncertainties inherent to rainfall-runoff models themselves and to climate change effects.

EC4/ Think of re-drawing Fig 5 more than just changing the scales. Ref 1 pointed to the larger variability in event 1 which is lost. I would add that the interesting values, i.e. whether the median is <>1 is not clear at all for events 1-3, only for event 4. I agree with Ref 1 that Fig 7 is a key element of your message and I also did not fully grasp your message there. I suggest that you more clearly explain in the text the increase in variability that comes as you sample precipitation at grid resolutions where precipitation intensity becomes more-and-more independent in space.

AC4 The authors thank Editor and reviewers for comment and suggestions that help to make clearer the readability of Fig 5 and its interpretation. We provided a new version of the figure with scales changed and a clearer focus on the interpretation of it.

EC5/ There is one aspect of rainfall spatial resolution which I warrants more discussion, going along the lines of Ref 3 on storm location: that is the sampling effect in the aggregation. Starting from a "raw" pixel resolution of say 100 m which is what the instrument measures, there are 25 ways in which a new grid for aggregated precipitation at 500 m may be defined, of which you just chose 1 as far as I understand. This may (or may not) include large uncertainty in the statistics for peak depth and flow. What is the author's opinion on this?

AC5 This is a good point and indeed the aggregation method could be a source of uncertainty as well as others mentioned previously (rainfall-runoff modelling, semi-distributed instead of fully distributed and so on). An interesting analysis could be conducted, using several methods of rainfall aggregation, computing the uncertainty by means of a comparison of results, and checking if this uncertainty will propagate through the hydrological modelling or the sensitivity of the model is lower than the uncertainty introduced by the rainfall aggregation method. However, in our study, the arithmetic mean has been chosen for all aggregation/averaging process. This means that every rainfall pixel is as important as any other, independent of its rainfall value. In consequence, high rainfall estimates will be smoothed as it is expected when rainfall is obtained by conventional C- and S- bands radars.

ED6/ I appreciate your focus is on spatial effects rather than temporal ones. However you do show some temporal resolution effects as well. If you decide to keep this section, please discuss the causes for the negative delays (time shift) going from 1 min to coarser time steps in Figs 11 and 12. Is this also only a sampling issue? Otherwise it is counter-intuitive with respect to your arguments for smoothing of runoff response by aggregation.

AC6 The temporal aggregation has been performed by averaging out 5 subsequent 1min rainfall values at time, therefore peak temporal shifting, either anticipation or delay, depends on the temporal position of peaks values. Therefore the anticipation/delay on runoff response depends on the anticipation/delay of rainfall peaks due to sampling issue. This will be clarified in the new version of the paper.

ED7/ Figure 9 has discharge not water depths.

AC7 Corrected.