

## Reply to Reviewer 2 comments

*Manuscript number: hess-2012-342-discussions*

*Title of the manuscript: On the nature of rainfall intermittency as revealed by different metrics and sampling approaches.*

*Authors: G. Mascaro, R. Deidda and M. Hellies.*

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### Reply to Reviewer 2

First of all, we thank Reviewer 2 for the comments on our work. In the following, the comments raised by Reviewer 2 are split into parts and copied in bold fonts to facilitate understanding of our answers.

**Page 9972 - line 1 typo: 'systematically'.**

We corrected the error in the revised version of the manuscript.

**Page 9972 - line 17 Given the importance of elevation here it would be interesting to know if the kriging that is referred to is actually co-kriging with elevation, or not.**

We added a sentence in lines 113-114 of the revised manuscript to clarify this.

**Page 9973 - line 16 suggest substituting 'autumn' for 'fall'.**

We accordingly modified the text.

**Page 9973 - line 29 and in following pages suggest substituting 'gauge' for 'gage' (American journals insist on the latter spelling, but this is a European journal, so I suggest sticking to British English spelling).**

We changed gage/s into gauge/s throughout the paper.

**Page 9978 It is difficult to develop an intuitive understanding of what the metric  $X_t$  represents. Could the authors add something here to help the reader?**

We added a sentence to better clarify the meaning of the metric introduced in equation (5) (lines 239-241).

**Page 9980 The authors should be lauded for a particularly clear presentation of the meaning of small or large  $K(3)$ .**

We improved the presentation of the meaning of the multifractal exponent in section 5.2 (lines 317-321 of the revised manuscript).

**Page 9988-9 the CC method is a very sensible approach; I would just comment that the authors indicate that it is practically never the case that there are non-spurious isolated tips in their data set (for which cases it is not clear how the conversion to intensities should proceed). This does not seem surprising for Sardinian rainfall, but it is however not the case for some more drizzly climates. As drizzle may be hydrologically relevant, it would be interesting to have the authors' view on how the method could be extended to such cases.**

The use of the CC approach for non-spurious isolated tips would cause the creation of a uniform intensity from  $t^* - \Delta t^*$  to  $t^*$ , where  $t^*$  is the time where a given isolated tip has been recorded by the gauge. Thus, we believe that a proper selection of  $\Delta t^*$  based on the typical cell life duration would allow a reliable representation of rainfall records also in a site with drizzly climate.