Stochastic rainfall analysis for storm tank performance evaluation

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Response to Referee Comment RC-C560 – Anonymous Referee #3

On behalf of co-authors, I thank gratefully Anonymous Referee #3 for his constructive and useful comments. Then, here are the responses for specific referred issues.

1. Page 1851 – lines 1-12

We completely agree with this comment, and these are in fact the advantages and drawbacks of both methods. We will include a discussion on this issue in the revised version of the paper.

2. Page 1851 – lines 19-29

As written in response to Anonymous Referee #1, the seasonal analysis will be included in the final version if the Editor finally considers it. In this case, we will be pleased to take into account the referred reference (Sivapalan et al., 2005).

3. Page 1862 – lines 15-18

Autocorrelation coefficients $\rho_V(k)$ and $\rho_D(k)$ are compared against the Anderson limits at 98% confidence level. Numerical results are not explicited in the original version of the manuscript. Results are here shown in figure 1.

4. Page 1862 – lines 20-26

The dependence between v and d is not really significant for the results achieved in the paper since only a volumetric analysis based on V is performed (as Q_V=0).

Scatterplot of v/d versus d for the Valencia raingauge in a log-log scale is shown in figure 2.

5. Page 1863 – lines 10-15

Results shown in Table 3 are only used to highlight that, for selected pdfs, fits improve significantly if censored series are used.

6. Page 1863 – line 19

We thank the referee for pointing out an imprecision in the manuscript which will be amended in the final version of the manuscript.

7. Page 1863 – line 24

Table 5 does not show that the Pareto model is the best fit. It's just a summary of the rainfall model selected for the Santander raingauge.

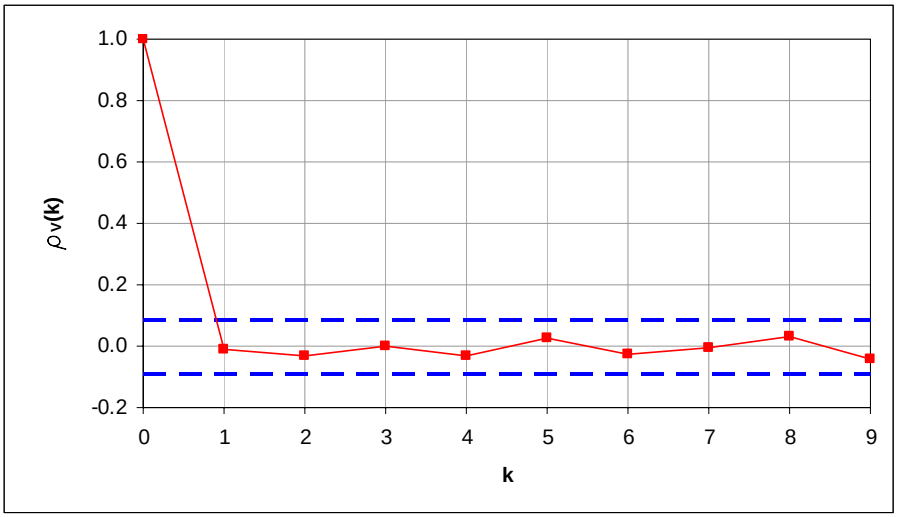
If the Editor agrees, we may add in figures 6 and 7 (of the original manuscript) fits corresponding to the other tested pdfs (Weibull, Gamma-2, Lognormal) in order to show graphically the best fit.

8. Page 1864 – line 1-9

We agree on including a deeper discussion on the difference between the Gamma pdf and the Pareto pdf for event duration in Valencia and Santander respectively and to add the climatic interpretation of this fact.

9. Table 3

A better alternative could be "test statistic value".



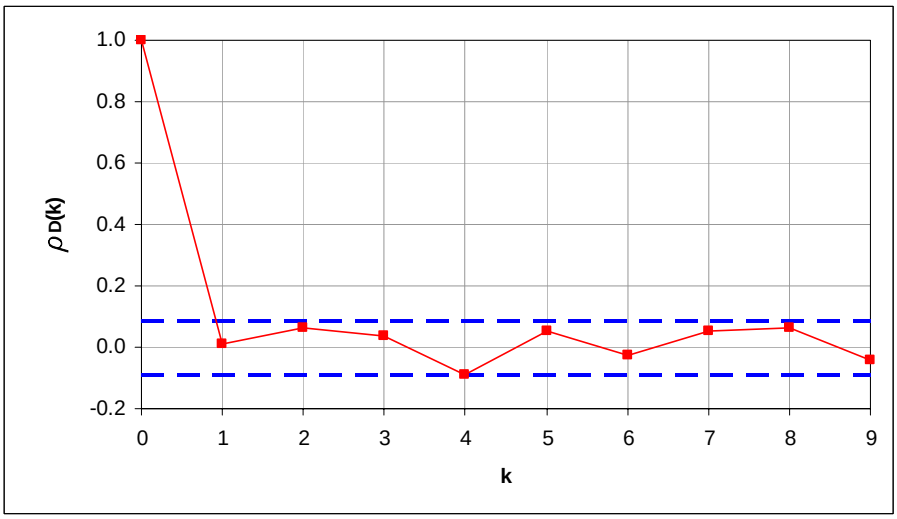


Figure 1. Autocorrelation coefficients $\rho_V(k)$ and $\rho_D(k)$ and Anderson 98% confidence limits (dash blue lines).

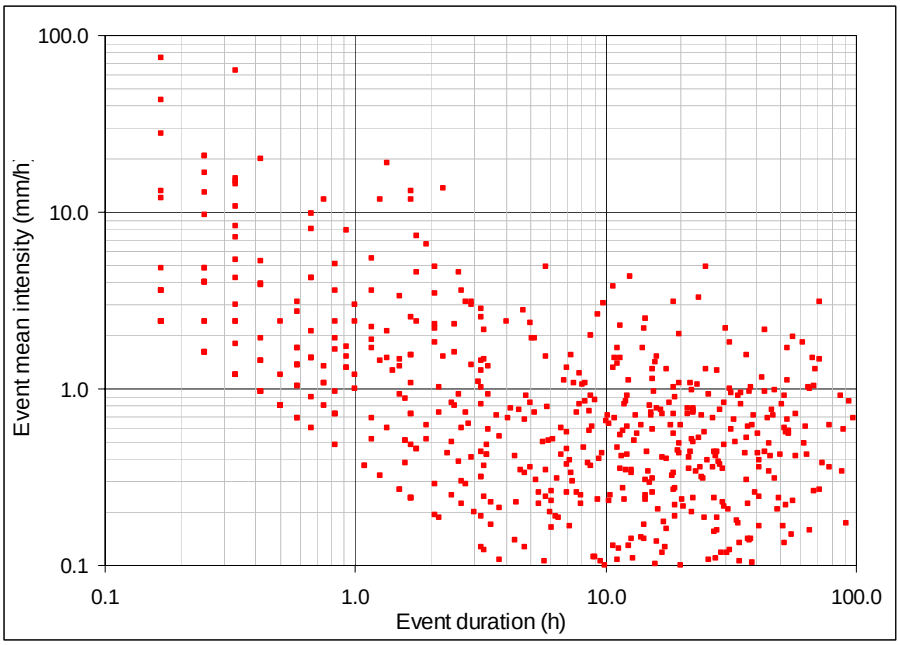


Figure 2. Scatterplots of *v/d* versus *d* for the Valencia raingauge.