**Hydrology and
Earth System
Sciences
Discussions**

Interactive comment on "Runoff properties of extreme discharges on Paraná and Uruguay rivers" *by* W. Vargas et al.

Anonymous Referee #3

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1. Does the paper address relevant scientific questions within the scope of HESS?

I do not think that this ms makes a relevant contribution to hydrologic science. There is no clear objective or aim stated for the ms ("to study the runoff series" and "to study the behavior of monthly anomalies" are not adequate aims for a paper; "to establish the presence of transference functions for rainfall and discharge" and "to estimate the homogeneity and representativeness of the measurements" might be OK, if one could only understand what is meant by this!). The methodology is deficient. The authors only analyse numbers, with no consideration of any physical basis for the results.

2. Does the paper present novel concepts, ideas, tools, or data?

There might be some novel idea hidden somewhere. Sadly, the description of the work is so incomplete, the different parts of the paper (methods, results, discussion) so mixed, and the language so convoluted, that it is impossible to ascertain this.

3. Are substantial conclusions reached?

Conclusions, as stated in Chapter 6 and in the Abstract are written in a highly cryptic style. E.g., what could each one of the following three phrases possibly mean?

"Results show that the structures are different for both rivers, which implies a different stochastic process."

"Identical representativeness was found between the anomaly series in each river."

"The risk estimation of extremes in both rivers indicates that it is possible to establish a decision model"

4. Are the scientific methods and assumptions valid and clearly outlined?

The Methods section is wholly inadequate. There isn't a single formula, not even to define the main variable under analysis, the "runoff monthly anomalies". There is no explanation of why more recent data, which were surely available, were not used. The definition of "extreme anomalies" above and below percentiles 70 and 30 is unusual. The definition for "spell of monthly anomalies" is not clear.

If authors plan to resubmit this ms (either here or somewhere else), they should rewrite the methods (and the whole ms) from scratch, showing their formulae, explaining each definition, and possibly developing an example, so readers can understand what they are actually doing.

5. Are the results sufficient to support the interpretations and conclusions?

Results are also spelled in a language that makes it very hard to understand this work. For example, what is meant by "As shown in Fig. 2 it can be stated that the selected gauge stations for each river possess similar statistical structures in terms of the occur-

rence of both, positive and negative anomalies", and how does Figure 2 support this statement in the first place? Shouldn't the authors have conducted some kind of test in order to make this statement?

How can it be that "the exception is the Paraná Túnel gauge station where the yearly anomalies are lesser than in the other gauge stations"? Why would there be fewer anomalies? Indeed, considering that every single mean monthly flow in the series will be either larger or smaller than the mean, shouldn't there be the same number of anomalies at all stations?

The text is riddled with phrases which are totally lacking context, so that it is almost impossible to understand where the authors want to go.

6. Is the description of experiments and calculations sufficiently complete and precise to allow their reproduction by fellow scientists (traceability of results)?

No, see comments above.

7. Do the authors give proper credit to related work and clearly indicate their own new/original contribution?

It is so hard to understand what the authors' aim is, that this cannot be answered.

The García and Vargas 1996 citation, on line 22, p. 2950, is unwarranted, as it has nothing to do with temporal change.

Rickey et al. 1989 should be Richey et al.

8. Does the title clearly reflect the contents of the paper?

Certainly not, as the paper only deals with mean monthly flows, and not with extremes. Indeed, what is exactly meant by "runoff properties of discharges"?

9. Does the abstract provide a concise and complete summary?

No, the abstract is as obscure as the rest of the ms. See comments above.

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10. Is the overall presentation well structured and clear?

No, this ms needs to be rewritten.

11. Is the language fluent and precise?

There is definitely a problem with the language, due to the fact that none of the authors seems to be a native english speaker. On the other hand, the writing problems with this paper go way beyond fixing these small grammatical mistakes. First, there is no context whatsoever, and very little motivation, and whatever there is only describes previous work (bordering on plagiarism at times). Then, most of the paper is actually unreadable, in the sense that one can understand the written words, but cannot make any real sense out of them because the lack of context makes it just too confusing.

12. Are mathematical formulae, symbols, abbreviations, and units correctly defined and used?

No, the methods section should include formulae.

13. Should any parts of the paper (text, formulae, figures, tables) be clarified, reduced, combined, or eliminated?

I have read the ms in detail three times, and cannot really understand it. All of this paper should be rewritten for clarity.

14. Are the number and quality of references appropriate?

Certainly not. All references relate to the introductory chapter, whilst the rest of the work is completely self-centered. To put it in different words: the first two pages of text, out of a total of nine, contain all of the references!

15. Is the amount and quality of supplementary material appropriate?

n/a

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 7, 2949, 2010.