

Interactive comment on “Rainfall and streamflow sensor network design: a review of applications, classification, and a proposed framework” by Juan Carlos Chacon-Hurtado et al.

Anonymous Referee #2

Received and published: 10 October 2016

This article presents a review of methodologies to address the design of sensor networks in hydrology and water management. The topic of the review is timely and certainly of interest to hydrologists and practitioners. However, the Authors should consider the following comments to improve on the overall clarity of the manuscript.

1) The manuscript language should be considerably improved. Please avoid typos and reword extensively to better clarify concepts.

2) Section 3 should be improved through a clear and simple explanation of underlying mathematical concepts and by adding representative case studies. Also, rather than listing applications, the Authors should provide comments on pros and cons for each approach, thus guiding the reader toward the selection of a suitable technique. Some-

C1

times I found it difficult to follow the text as concepts were not properly connected. Few comments are devoted to Table 2 and to the Conclusions and recommendations.

3) Section 6 is poorly related to the others and its title is not sufficiently informative. I suggest Sections 5 and 6 are merged into a more comprehensive Discussion.

4) What is the relevance of the topic? I am sure of the importance of the subject but the Authors could better emphasize through key cases why the design of sensor networks is crucial and what major issues engineers/researchers may face in their definition.

HESS REVIEW CHECKLIST

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

Yes, the design of sensor networks is crucial in Hydrology and Earth System Sciences.

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

Although this is a review paper, a novel framework to tackle sensor network design is presented.

3. Are substantial conclusions reached?

Yes but they need to be better commented and pointed out.

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

Yes but text should be improved.

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

No, methods should be better commented and case studies provided to support the suitability of the proposed framework.

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

Not applicable to a review paper.

C2

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

Yes

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

Partially, I'd expected more applications were more clearly reported.

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

Yes but it could be improved: the concept of using the performance of hydrological simulation of discharge as design criteria is not properly linked to the previous sentence.

10. Is the overall presentation well structured and clear?

The structure of the paper is fine but text needs improvement.

11. Is the language fluent and precise?

No, it needs considerable rewording.

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

Not all formulas are clear. For instance, the explanation of terms in Eq. 16 (lines 405-407) is very confusing.

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

Yes, text should be thoroughly clarified and typos avoided.

14. Are the number and quality of references appropriate?

Yes.

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

C3

Not applicable.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., doi:10.5194/hess-2016-368, 2016.

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