Review comments on the article submitted to HESS (2015-92) entitled:

Improving multi-objective reservoir operation optimization with sensitivity-informed dimension reduction

by

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The authors have addressed all comments raised during the first review of the article and their revisions have resulted in very significant improvements. The article can be published in HESS, after addressing very few, minor comments (mostly technical corrections):

1. Page 3, Line 61: Add the words "deal with" at the end of the line.

2. Page 7, Line 146: Change the beginning of the sentence to read: "As we know, water demand......"

4. Page 8, Line 162, 163: Change "represent" to "represents" on both lines.

5. Page 9, Line 189: Change last to words from "to meet" to "for meeting".

6. Page 11, Line 212: Change formulation to read: "...year, R in that year is equal to the sum: $W_{1,j}(x) + W_{2,j}(x)$.".

7. Page 11, Line 224: Change "in determining" to "to determine".

8. Page 11, Lines 232, 233: The notations of the epsilon values in brackets now mentioned in Line 232 should be moved to Line 233, after the word NSGAII.

9. Pages 34, 35 Lines 274-289: When discussing generational distance and ε-indicator the "reference set" is different compared to the "reference solution set" discussed under hypervolume indicator. To avoid any confusion, I suggest to call the second one "base solution set" on Line 285 and to use the word "base" in Line 286 instead of "reference"

10. Page 22, Line 473: Add small clarification at the end of the sentence:"....during the non-flood season, compared to the same curve in the flooding season.".

11. Page 24, Line 521: Change "Similar" to "Similarly".

12. Page 25, Line 525: Change "Similar" to "Similarly".

13. Page 25, Line 535: Change "decomposing" to "reducing the dimension of".

14. Page 26, Line 550: Change "Similar" to "Similarly".

15. Page 26, Lines 562, 563. I don't understand how the results in Figure 10 are judged to be "as good" as those in Figure 5. Please elaborate your judgement in a sentence or two. The figures have different scales for the y-axes and it is not easy to compare, but even taking this into account the judgement is not clear. Is this comparison relevant at all, given that these are for two different cases?

16. Page 29, Line 633: Change formulation to read: "...the most the pre-conditioned search needs is 30% to 40% of the NFE compared to the full...."

17. Page 30, Line 647: If it can be applied to many multi-objective algorithms, why mentioning only one (AMALGAM? Please, either mention few, or, better don't mention any.

18. In my first review I gave a suggestion to use 10^3 and 10^6 (thousands or millions), when mentioning values of storages, etc. The authors have responded that this has been changed in the revised manuscript, but this has not been done in tables and figures. Please see if this can be updated.

Thank you very much for an interesting article.