

## ***Interactive comment on “Seasonal streamflow forecasts for Europe – II. Explanation of the skill” by Wouter Greuell et al.***

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We are very happy with the fact that the editor found three anonymous referees to give their highly informed opinions on our paper. We thank all three for their respective efforts to produce such extensive and constructive reviews.

Apart from two major issues raised by the reviewer, he/she made many smaller and bigger suggestions to improve the text structure and phrasing. We adopt most of the suggested textual improvements and specified our action to every remark in the annotated report "hess-2016-604-RC1-author-reply.pdf1". Here our response to the two major issues raised:

1. we presented skill of the meteorological forecasts based on non-bias-corrected hindcast data, while we used bias corrected data to force our VIC model. We did

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so because we believe not all possible applications of seasonal climate forecasts require bias corrected data, and that non-bias corrected data have intrinsic value of their own. Also, in contrast to this specific applications may require different bias correction techniques addressing particular alternative statistical aspects/modes. Also part of the climate community questions the appropriateness of bias corrections at a more fundamental level. Nevertheless, we aim to also present also the bias corrected version of figures 1 and 2 either in an appendix or vice versa BS in the main text non-BC in the appendix, thus actually showing the marginal differences between the skill for corrected or non-corrected data. Figure 3 will be moved to the appendix; it is there for completeness, but is not very informative.

2. we designed our ESP and especially the revESP experiments different from most previous studies in the sense that we sampled the latter from the S4 hindcasts rather than from the reanalysis that forced the reference simulation that produced the pseudo observation. Also RC2 raised this issue (his comment #6 ), recognizing it in principle as "...a good thing". So we will better explain in the 'methodology' what we did and why we did it. Our objective for the rev-ESP is, unlike for the original rev-ESP, to analyse the effect of eliminating the skill due to initial conditions on the forecast quality. So it quantifies the propagation of skill originating in the meteorological forecasts as it is modulated by the hydrological model. Therefore we also take the full Hindcast as reference in this analysis. To stress this we follow RC2 his suggestion to give it a new name (RC2 suggests HESP but we might come up with a slightly different one) to better make clear it is not completely following conventions. Then in the discussion we will come back to this and discuss its merits and drawbacks more extensively, and to what extent it influences the comparability of our results with those of other. [see also our reply to RC2 comments#5 and 6] With RC1 we agree that the conclusions section is too long/too detailed. We will condense and shorten it. Also the introduction can and will be tightened up, for which RC1 gives multiple hints, while presenting a fuller context by referral to papers suggested by RC2 (his comment 7). We will also improve the figure legends, axis labelling, etc for which many good suggestions are given.

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Please also note the supplement to this comment:

<http://www.hydrol-earth-syst-sci-discuss.net/hess-2016-604/hess-2016-604-AC1-supplement.pdf>

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., doi:10.5194/hess-2016-604, 2016.

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