

Editor's comment is numbered (1 to 3), and my reply in indent.

1) Add Eq. in front of all references to equations

I've included "Eq." in front of all equation references. I hope the text as it is now, is consistent to the HESS standard. If not, please let me know!

2) Please check the language carefully once more, e.g. Overestimated is one word.

The manuscript has been 'washed' by a native English-speaking person during the review process, but after reading carefully through the manuscript once more I've realized there was still quite a few errors. These mistakes are now corrected. The meaning of the text, however, is not changed. I appreciate very much this opportunity to correct the errors before publishing, and I hope the current version does not have too many language errors. To make the corrections traceable, I've made the following list of corrections:

Page 1, line 14 and 15,  
changed from:

"Global warming and natural climate fluctuations give rise to urgent calls for society to quantify impacts on the hydrological cycle."

to:

"Global warming and natural climate fluctuations give rise to urgent calls from water authorities to quantify impacts on the hydrological cycle."

Page 2, line 28,  
changed from

"... from a location, Norway, where ..."

to:

"... from an area where ..."

Page 2, line 33,  
canceled:

"..., which imply that they are positively skewed"

(Because it is redundant information.)

Page 4, line 24,  
changed from:

"... a few words on the geological setting is necessary."

to:

"... a few words on the geological setting are required."

Page 4, line 25,  
changed from:

"... sediments on mainland Norway is ..."

to:  
“... sediments on mainland Norway are ...”

Page 5, line 23,  
changed from:  
“Mean and standard deviation ... is ....”  
to:  
“Mean and standard deviation ... are ....”

Page 5, line 25 and 26,  
changed from:  
“..., which are small for minor separation distances, increase to ...”  
to  
“..., which are small for minor separation distances, and which increase to ...”

Page 7, line 28,  
changed from:  
“... the true value are ...”  
to:  
“... the true value is ...”

Page 10, line 10,  
changed from:  
“... the observations: ..., where available ...”  
to:  
“... the observations: ..., were available ...”

Page 10, line 17,  
changed from:  
“... matrix ... denote ...”  
to:  
“... matrix ... denotes ...”

Page 10, line 17 and 19,  
“ $k=D,L$ ” moved to after reference to Eq.(16).

Page 11, line 3,  
changed from:  
“... can be written (Myers, 1982).”  
to:  
“... can then be written (Myers, 1982):”

Page 11, line 5,  
changed from:  
“The total variance is the ...”  
to:

"Hence, the total variance is equivalent to the ..."

Page 11, line 8 to 13:  
Slightly rephrased.

Page 11, line 19,  
changed from:  
"... accuracy ... are ..."  
to:  
"... accuracy ... is ..."

In Page 11 and 12,  
I've also removed some parentheses to make the text less clumsy.

Page 12, line ,  
changed from:  
"The location of boreholes ..."  
to:  
"The GRANADA boreholes used in the current study, ..."

Page 12, line 18,  
Commas removed after "mean" and before "windows"

Page 12, line 15,  
changed from:  
"... above (3.1) ..."  
to:  
"... in section 3.1 ..."

Page 13, line 2,  
changed from:  
"... the artefact was ..."  
to:  
"... the censored character was less obvious ..."

Page 13, line 29,  
changed from:  
"... criteria ..."  
to:  
"... criterion ..."

Page 14, line 7,  
changed from:  
"... the absolute error ..."  
to:

“... the mean absolute error ...”

Page 14, line 9,

changed from:

“... over estimate...”

to:

“... overestimate ...”

Page , line ,

changed from:

“... criteria ...”

to:

“... criterion ...”

Page 14, line 10,

changed from:

“... the absolute error (10) and the mean of the absolute error (25) ...”

to:

“... the mean absolute error (Eq. 25) ...”

Page 14, line 14,

changed from:

“... difference in absolute error ...”

to:

“... difference in mean absolute error ...”

Page 15, line 12,

changed from:

“... do recalculation of ...”

to:

“... recalculate the ...”

Page 15, line 13,

changed from:

“... semivariograms were ...”

to:

“... semivariograms, however, turned out to be ...”

Page 15, line 20,

changed from:

“... weights are ...”

to:

“... weights were ...”

Page 15, line 21,

changed from:

"... (3.1) ..."

to:

"... (c.f. section 3.1) ..."

Page 15, line 23,

changed from:

"... semivariograms was ..."

to:

"... semivariograms were ..."

Page 16, line 2 and 3,

changed from:

"By similar token, horizontal distance ..."

to:

"A similar token was applied in the current study. Here, horizontal distance to outcrop  $L(u)$  was evaluated as secondary information to control impact of biased observations of sediment thickness  $D(u)$ ."

Page 16, line 14,

changed from:

"... as done ..."

to:

"... as was done ..."

Page 16, line 15,

changed from:

"... OK and CK overestimates ..."

to:

"... OK and CK overestimated ..."

Page 16, line 15,

changed from:

"This result is ..."

to:

"Such results are ..."

Page 16, line 33,

changed from:

"... Norway) is ..."

to:

"... Norway) was ..."

Page 17, line 22,

changed from:

"... OK estimates demonstrating ..."

to:

"... OK estimates. This result demonstrates ..."

Page 17, line 23,

changed from:

"... an secondary ..."

to:

"... a secondary ..."

Page 19, line 19, and page 21, line 1.

Minor cosmetic changes in references: added space between family name and first name.

Page 23, line 3 in figure text,

changed from:

"... distance to nearest ... were ..."

to:

"... distances to nearest ... were ..."

3) The sentence starting on line 5 in the abstract is a bit confusing. From the text (I think) I understand what you mean, but please clarify here and also later how errors can be similar but accuracy different.

Thank you for making this comment! I understand that this might be a bit confusing, and I've changed the text in the abstract in

page 1, line 5 and 6,

from:

"The analysis showed only minor differences between OK and CK in terms of absolute estimation error, however CK produced more precise results than OK."

to:

"The analysis showed only minor differences between OK and CK with respect to differences between estimation and true values. However, the CK results gave in general less estimation variance compared to the OK results."

I also rephrased slightly

Line 11 and 12:

From:

"Despite of the noisy character, the analysis demonstrates that  $L$  can be used as a secondary information to reduce the estimation variance of  $D$ ."

To:

"Despite of the noisy character in the observations, the analysis demonstrated that  $L$  can be used as a secondary information to reduce the estimation variance of  $D$ ."

The absolute error (Eq.24) is the difference between estimated value and true value. The mean absolute error (Eq.25) is the average from all cross-validation results. In addition, each single estimate has an estimation variance (Eq.23). This variance is included in the quantity called accuracy (Eq.28) and precision (Eq.31). Thus, accuracy and precision include the 'spreading' (i.e. the variance) of the estimates. Of that reason, the mean absolute error can be similar for two methods, but the precision might be difference. I've read through the manuscript carefully, and from my point of view this should be clear enough. I know I'm a bit biased at this point, but the equations should be quite evident.

Please, let me know if there is anything more you would like me to consider, and thanks again for your careful editor work!