

Dear Editor,

We are thankful for further underlying the importance of the point highlighted by the anonymous reviewer on the statistical method applied, which has to do with appropriateness of Pearson v. nonparametric (e.g., Spearman) correlation estimates.

Many studies have been reported in the applied statistics literature on the appropriateness of least squares vs. nonparametric estimators (e.g., of correlation; Pearson vs. Spearman, Kendall's Tau, or others). The general finding is that parametric estimators perform slightly better than nonparametric ones so long as the underlying distribution(s) are "well behaved" (i.e., don't have heavy tails, for instance normal) but perform much worse in the presence of heavy tails. So the question of appropriateness of Pearson's correlation in our case really comes down to whether the data we analyzed have heavy tails. As described in the ATBDs accompanying each data set (which we cite), we ensured the absence of outliers in the WSE and WSA products. Specifically, each product was filtered using a 30-day median window to reject potential outliers. At the selected example site (Lake Sakakawea), WSE and WSA show a strong linear correlation with  $R^2 = 0.908$  (Figure 6), which confirms the appropriateness of using a parametric (Pearson's) correlation coefficient. Furthermore, by providing both the WSE and WSA products, it is possible for users to apply any statistical method they desire based on their needs in order to estimate storage change.

For these reasons we argue that the statistical methods we have used are appropriate to the data products described in the paper.

Should you have any further concern, please do not hesitate to contact me.

Sincerely,  
Riccardo Tortini