

## ***Interactive comment on “Spatially shifting temporal points: estimating pooled within-time series variograms for scarce hydrological data” by A. K. Bhowmik and P. Cabral***

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We hereby acknowledge that the anonymous referee #1 and #2 were correct regarding SSTP exhibiting identical performance and precision to WAEV. The differences between the precision of SSTP and AEV observed in our study were due to the conversion of angular distances (in degree) to great circle distances (in km) by the "gstat" package of R. As we have performed the spatial shifts on a geographical plane using angular coordinates (using 10 degree as shift distance), the great circle distances between same point pairs changed across spatial clusters while shifted. Consequently, the same point pairs were binned in different spatial-lags for SSTP than for WAEV and

C3052

AEV.

We estimated variograms for projected coordinates of data points using the three methods, where points were shifted on a projected plane using a cartesian distance (1400 km). SSTP and WAEV computed identical semivariances and hence, estimated identical variograms. Therefore, SSTP exhibited identical precision to WAEV, and both exhibited higher precision than AEV. We attach the updated variograms as a supplement to this post.

We would like to thank the referees for pointing it out earlier. Necessary changes in the manuscript will be performed after receiving the second round of review comments.

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C3053

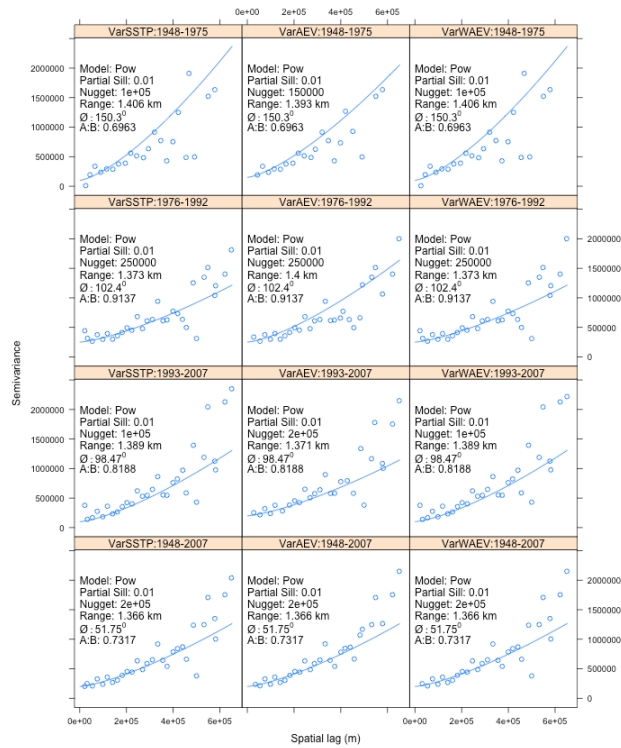


Fig. 1.

C3054