

Interactive comment on “Inverse streamflow routing” by M. Pan and E. F. Wood

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This is in response to Dr. Keith Beven’s comment that “. . . this is really only a way of distributing the specific discharge at a gauge according to some transformed distance scale / time delays. It does not properly distribute in space because it cannot differentiate between effective different time delays. It would be really interesting to see what effect this has at much smaller scales, when the time delay “bands” inferred by the method should be apparent.”

We here provide a same figure as Figure 4 in the manuscript but using a finer color scale to show the stratification of runoff within each sub-catchments due to difference in time delays (see panel c of the figure below). As mentioned in our last response, such banding, though does exist, will not be very pronounced due to our choice of (1) large time step (1 day), (2) small sub-catchments where the total travel time is no more

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than a couple of days, and (3) strong contrast between neighboring sub-catchments. Also, weak “banding” within a sub-catchment does not mean the time delay difference can be ignored because this effect goes far beyond the sub-catchment scale (a couple of days) and spans the entire basin (up to 15 days).

And due to the addition of extra figures in revisions, we decided not to include this figure in the revised manuscript since it provides no new information except for finer color shading.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 10, 6897, 2013.

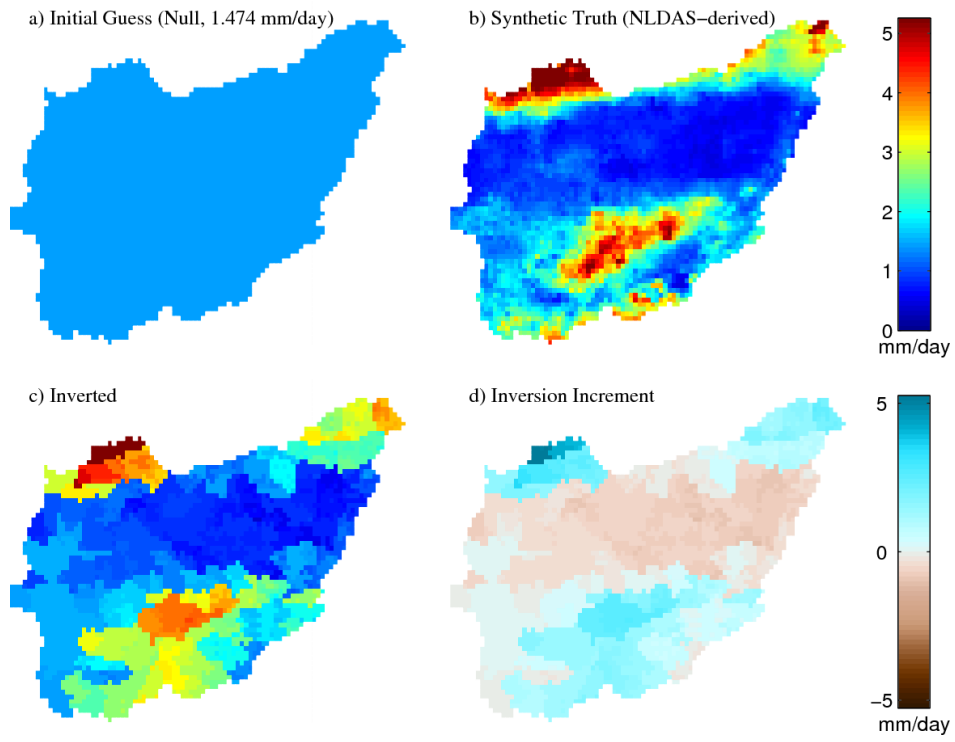


Fig. 1.