

Interactive comment on “Expansion and contraction of the flowing stream network changes hillslope flowpath lengths and the shape of the travel time distribution” by H. J. Ilja van Meerveld et al.

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A very interesting study! It has been long known that hillslope and open-channel partition impacts catchment hydrographs but few studies have estimate this point using high-quality dataset. The main contribution of this study is to map multi-temporal, accurate flowing stream networks and investigate their impacts on catchment hydrographs. Some important implications have been reported as well.

This reminds me of the work I've done for routing surface meltwater on the Greenland

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ice sheet. I've found hillslope and open-channel partition impacts surface meltwater discharge at the catchment outlet. However, I used a series of cumulative area thresholds to create dynamic supraglacial stream networks from DEMs (see Figure 7). This study has done a better work: instead of using DEM simulations, real field-measured stream networks are used.

If the authors are interested, see my paper published in The Cryosphere: Yang, K., Smith, L.C., Karlstrom, L., Cooper, M.G., Tedesco, M., As, D.v., Cheng, X., Chen, Z., Li, M., 2018. A new surface meltwater routing model for use on the Greenland Ice Sheet surface. *Cryosph.* 12, 3791-3811. <https://www.the-cryosphere.net/12/3791/2018/>

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