

This is not a review of the paper nor have I gone through the whole manuscript in detail, but I have some specific comments. My first major issue is with the title. First, this is not a paper about the topic of the title at all. They present no evidence for the existence of a continuous “river” and that analysis was undertaken in a paper published six years ago [Bamber *et al.*, 2013]. The title of that paper answers the question about the existence of a continuous channel beneath the GrIS and we show hydraulic potentials that indicate likely drainage along the channel. Furthermore, we make it clear that the limited IPR coverage prevents direct observational evidence of a continuous channel but, given its origin, we conclude that it is most probably continuous. A large part of the introduction to this paper is, therefore, repeating previous inferences but in a way that suggest that they are new. I find that problematic.

Second, what do the authors mean by “river”. To use this noun is incredibly misleading especially given the fact that, according to Fig 3b the modelled water depth appears to be ~0.5 mm! Water flow may be within an R channel (but not with those depths) or it may be via a thin film and it may or may not be continuous along the length of the channel. That is not a “river” in its conventional meaning.

A better title for this study would be “On the impact on subglacial water routing of a continuous subglacial channel from central to northern Greenland” because that is what this paper is actually about. Not conjectures on the existence of a “river” or not.

There appears to be either a problem with scale/labelling on Fig 3 or with the calculations themselves because the water depth in Fig 3b appears to have a maximum (plotted) depth of 1 cm. However the difference in water depth in the two cases (Fig 3d) is up to 10 cm, which is clearly impossible. Either there is a problem with the numeric or the plotting. In addition, I read the description of Fig 3 and I had difficulty in making sense of it. I could not discern, for example, the 3 quasi linear sections the authors refer to.

Bamber, J. L., Siegert, M. J., Griggs, J. A., Marshall, S. J., and Spada, G. (2013), Paleofluvial Mega-Canyon Beneath the Central Greenland Ice Sheet, *Science*, 341(6149), 997-999.