

***Interactive comment on “Deriving a global river network map at flexible resolutions from a fine-resolution flow direction map with explicit representation of topographical characteristics in sub-grid scale” by D. Yamazaki et al.***

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Dear Dr. Fekete

Thank you for your thoughtful comments on the article.

As you pointed out, resolution of the river network map determines what it can represent. Errors in constructed river network map may decrease when resolution of it became higher. However, smaller scale rivers will face the same problem in even high

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resolution map. So, I'm going to add the following sentences to p.5028, line 20. "...from the eight neighboring cells. Even though errors in constructed river network map may decrease when resolution of it becomes higher, smaller-scale rivers resolved in high-resolution grids will face the same problem."

Certainly, FLOW is not easy to handle with most existing river routing models because it breaks traditional eight directional (D8) grids. So, FLOW requires custom made software to manage it. However, sub-basin topographic features represented by FLOW may have a large impact on hydrological modeling. Traditional methods are truly important, but I believe alternative way of modeling with new concepts will broaden the possibility of hydrological simulation.

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