

Interactive comment on “Assessing the impact of different sources of topographic data on 1-D hydraulic modelling of floods” by A. Md Ali et al.

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We would like to thankfully acknowledge Anonymous Reviewer #2 for being complimentary about our research work, and providing useful and constructive comments to our manuscript, which helps to further improve our scientific work. We agree about the limitation of using 1-D model. However, the used of 2D models to produce reliable estimates is subject to several factors, such as the availability of detailed data for calibration (depth and velocity at different locations) of 2D models (Werner 2001; Bates et al. 2003, Merwade et al. 2008). For instance, the use of upstream and downstream stage and discharge data, which are often sufficient for the calibration of 1D models, are generally found inadequate to calibrate a 2D model. Furthermore, the use of 2D

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models particularly in probabilistic frameworks are often constrained by the long simulation time that it required. Several authors also have carried out a number of studies and showed that the performance of 1D model are often very close to the one of a 2D model provided that the topography of the river and floodplain is properly represented (e.g. Horrit and Bates 2002, Castellarin et al., 2009, Cook and Merwade 2009). Nevertheless, in line with the Referee's suggestion, our current research work will include a number of simulations using 2D hydraulic modeling to explore the differences and possible discrepancies between the results of a 1D and a 2D models for our case study.

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