

Interactive comment on “Consistent Initial Conditions for the Saint-Venant Equations in River Network Modeling” by Cheng-Wei Yu et al.

Anonymous Referee #1

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The authors present two new approaches to generate initial conditions for the shallow water equations for unsteady flow simulations. Determining suitable initial conditions is especially important for large river networks as poor initial conditions may not lead to convergence or to very large spin-up times for the unsteady solver. The authors demonstrate the sensitivity of disturbed initial conditions on the spin-up time resulting in a considerable increase. Their first method PTM uses the same unsteady flow solver and is suitable for short reaches, however it fails or is no more suitable for large river networks. Their second method SSM overcomes this difficulties and is successfully applied to the large network of the San Antonio and Guadalupe River basins, a pseudo code is given. Especially the SSM approach might become a valuable for future simulation of large river networks which probably will become more important in the future.

The article is very well written (clear, concise and well–structured) and the topic and

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discussion are interesting.

Overall, I see sufficient innovation and suggest to accept the paper.

Line 31: Priessmann's -> Preissmann

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