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Confinement width and inflow-to-sediment discharge ratio control the morphology and braiding intensity of submarine channels: insights from physical experiments and reduced-complexity models

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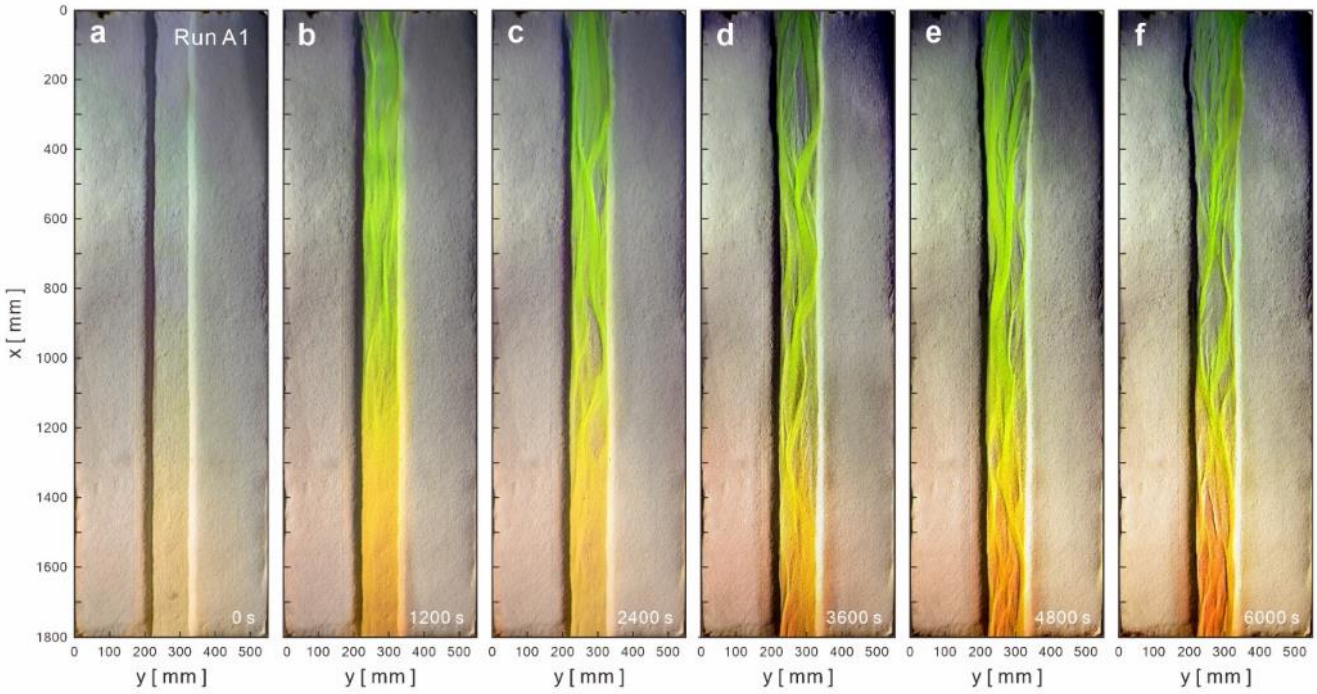

Figure S1. Orthophotos of Run A1 from t = 0 to 100 min.

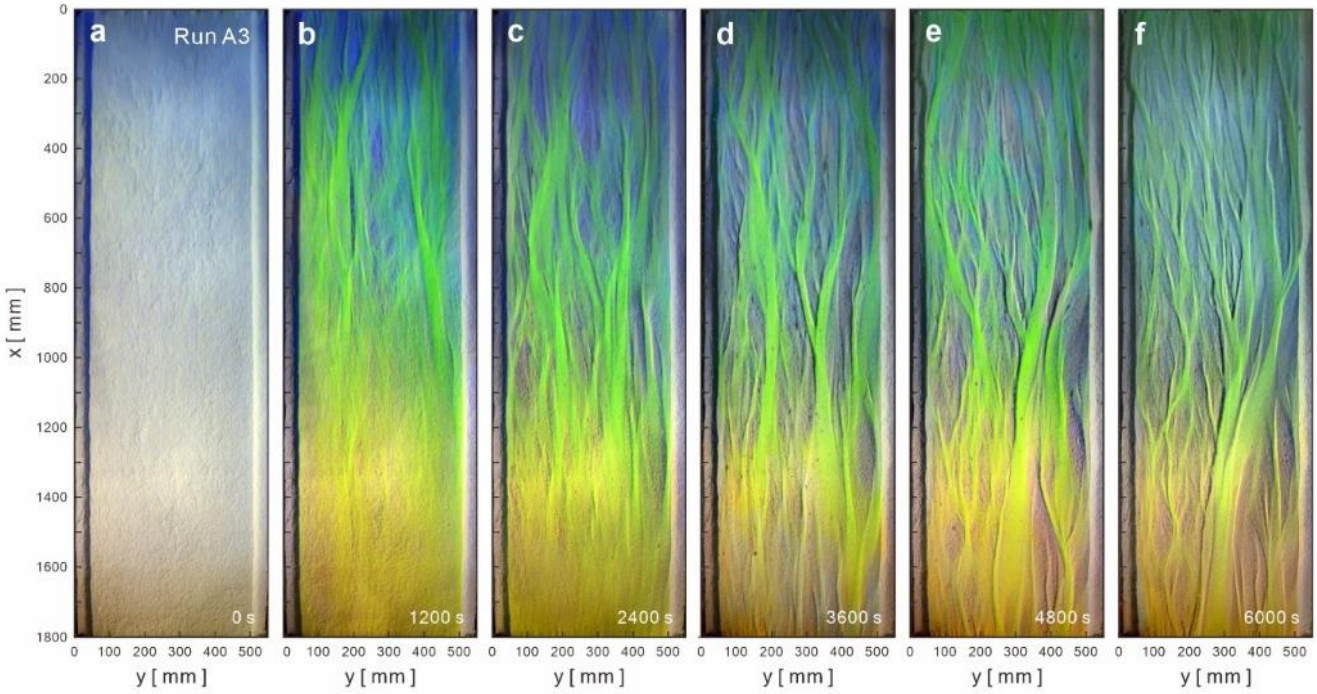

Figure S2. Orthophotos of Run A3 from t = 0 to 100 min.

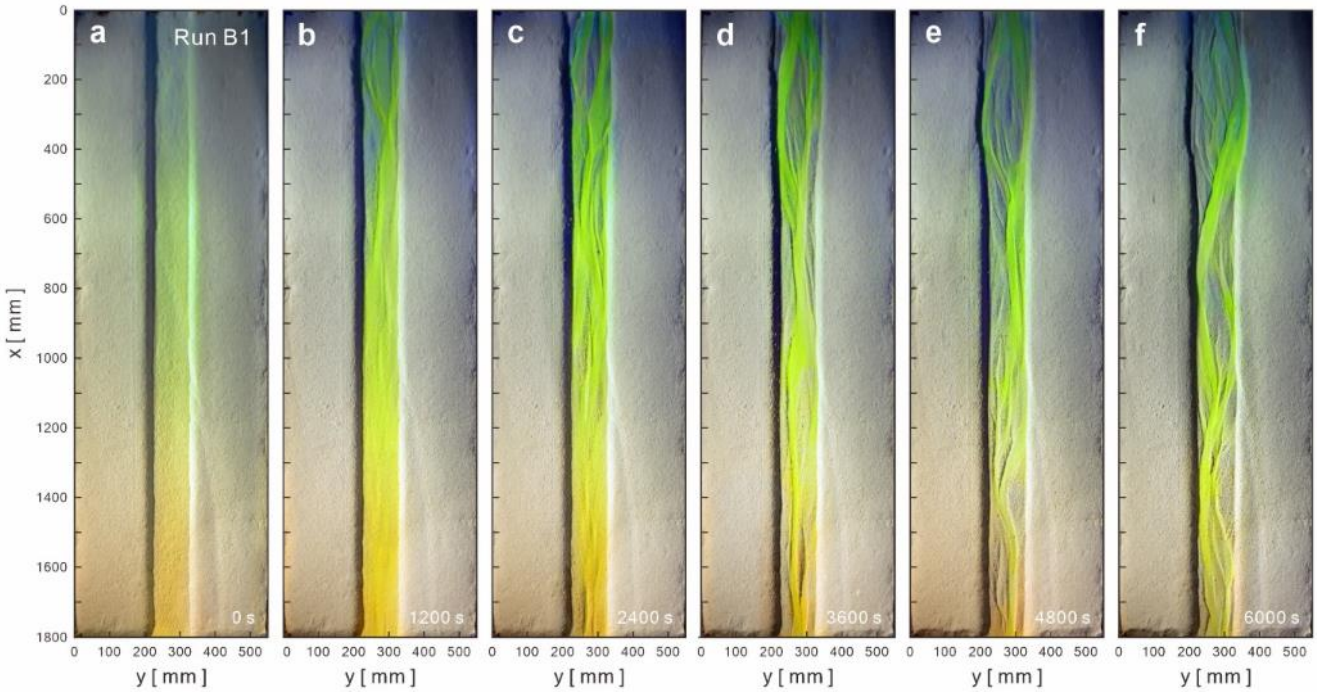

Figure S3. Orthophotos of Run B1 from *t* = 0 to 100 min.

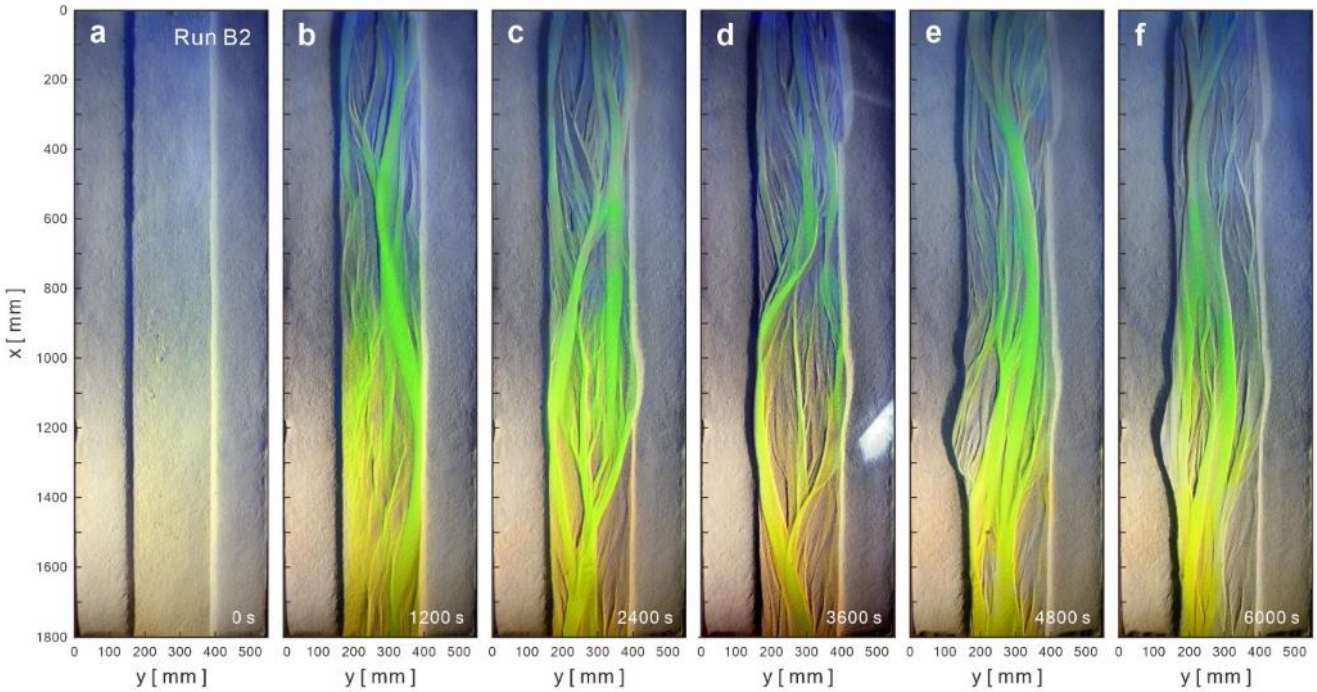

Figure S4. Orthophotos of Run B2 from *t* = 0 to 100 min.

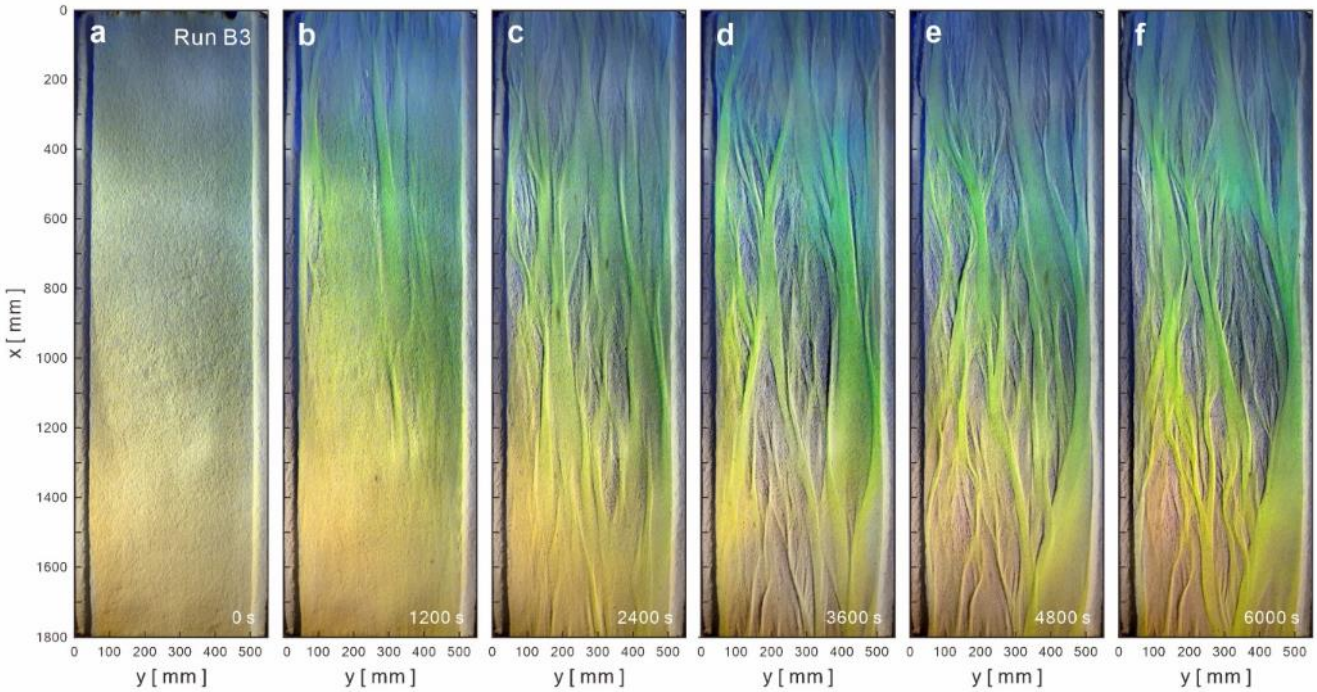

Figure S5. Orthophotos of Run B3 from t = 0 to 100 min.

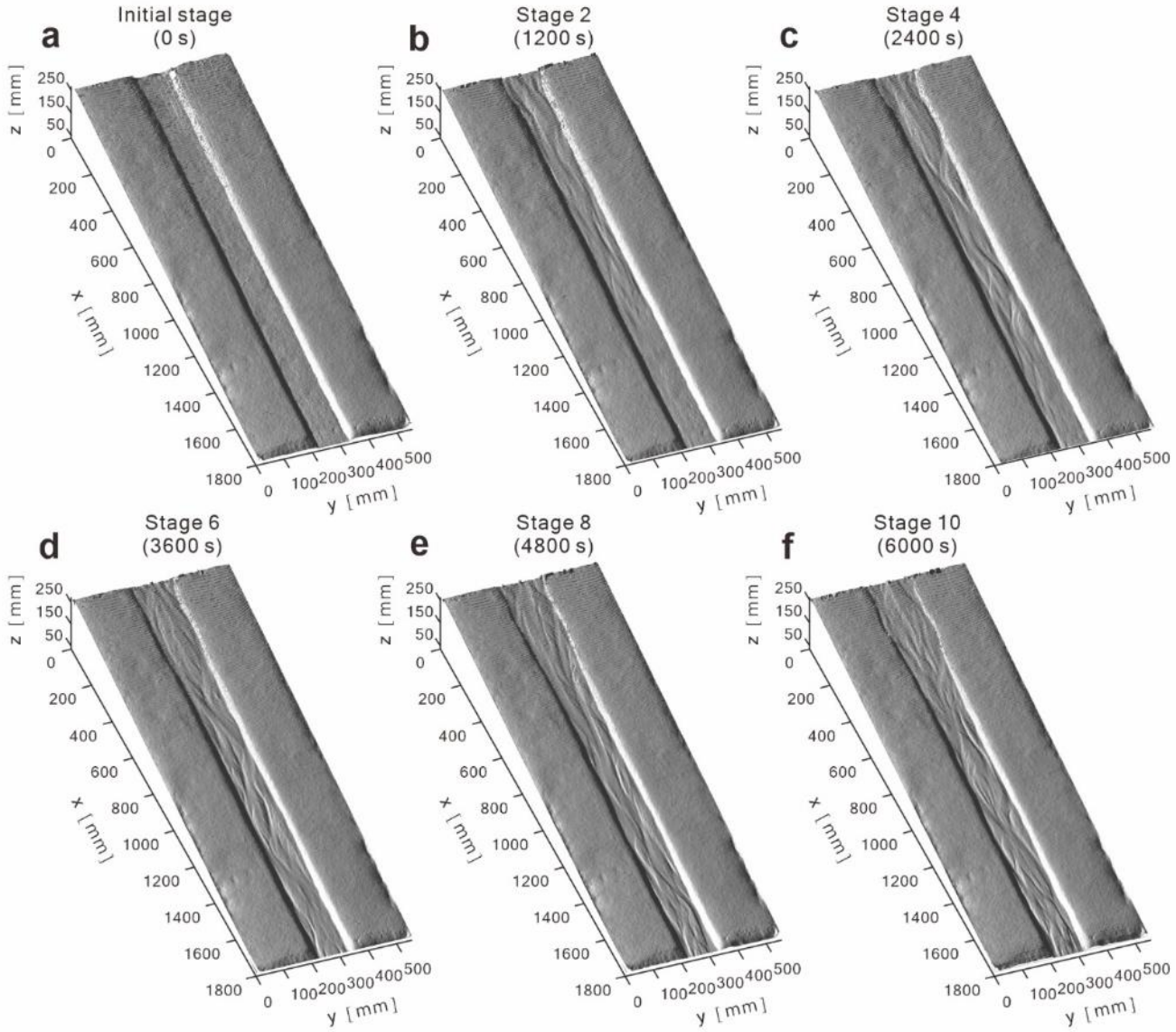

Figure S6. Hillshaded DEMs of Run A1 from t = 0 to 100 min.

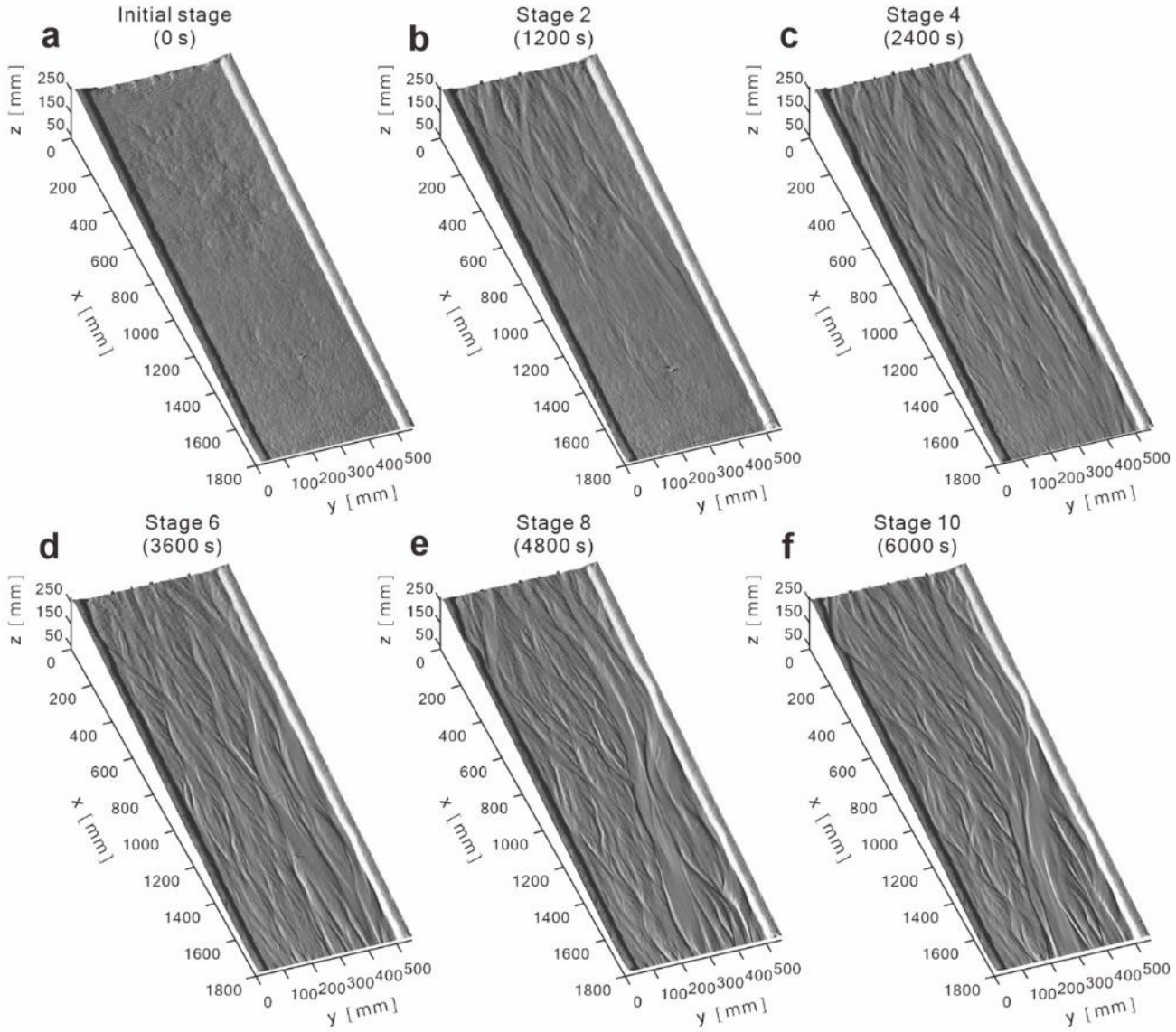

Figure S7. Hillshaded DEMs of Run A3 from t = 0 to 100 min.

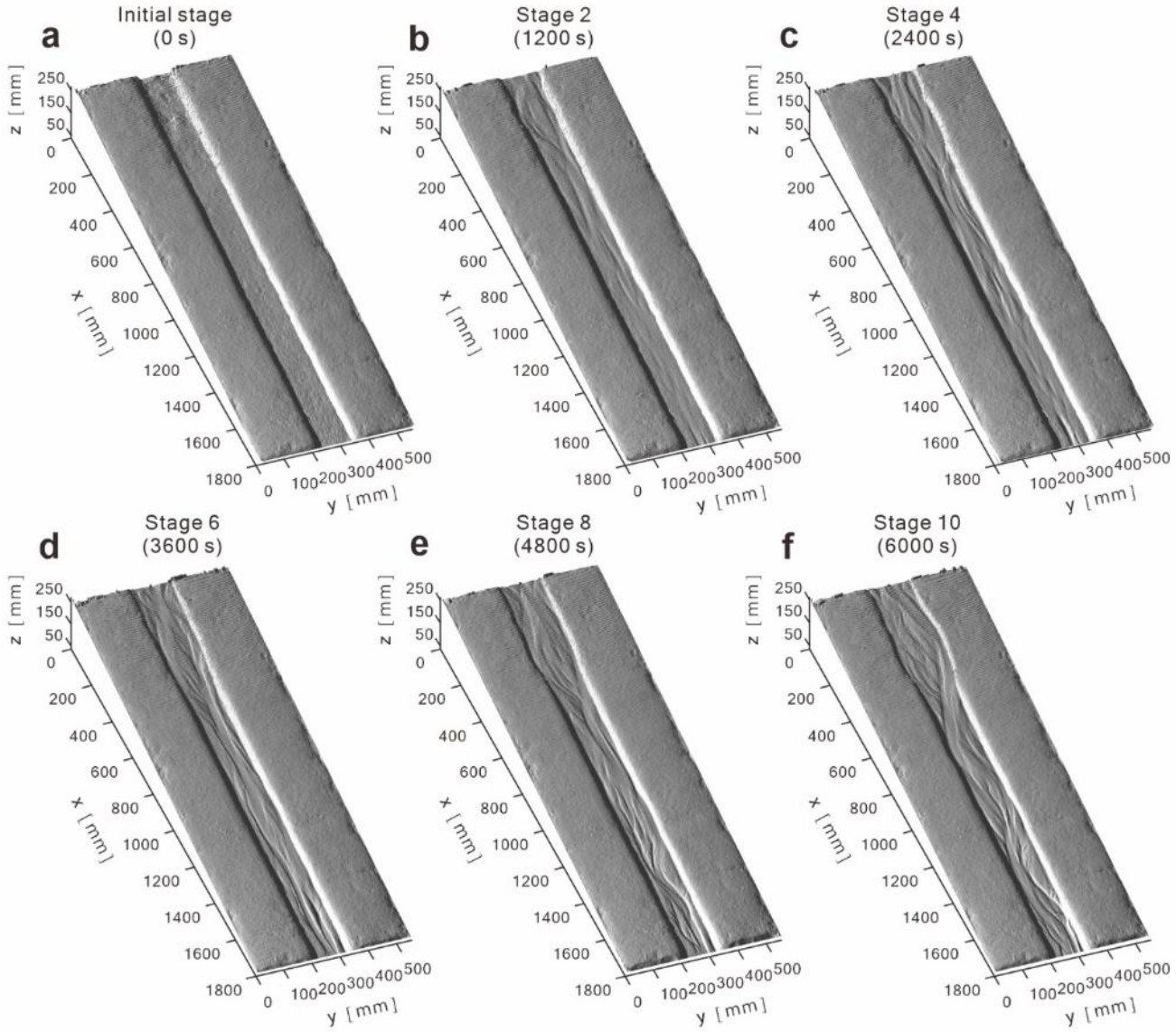

Figure S8. Hillshaded DEMs of Run B1 from t = 0 to 100 min.

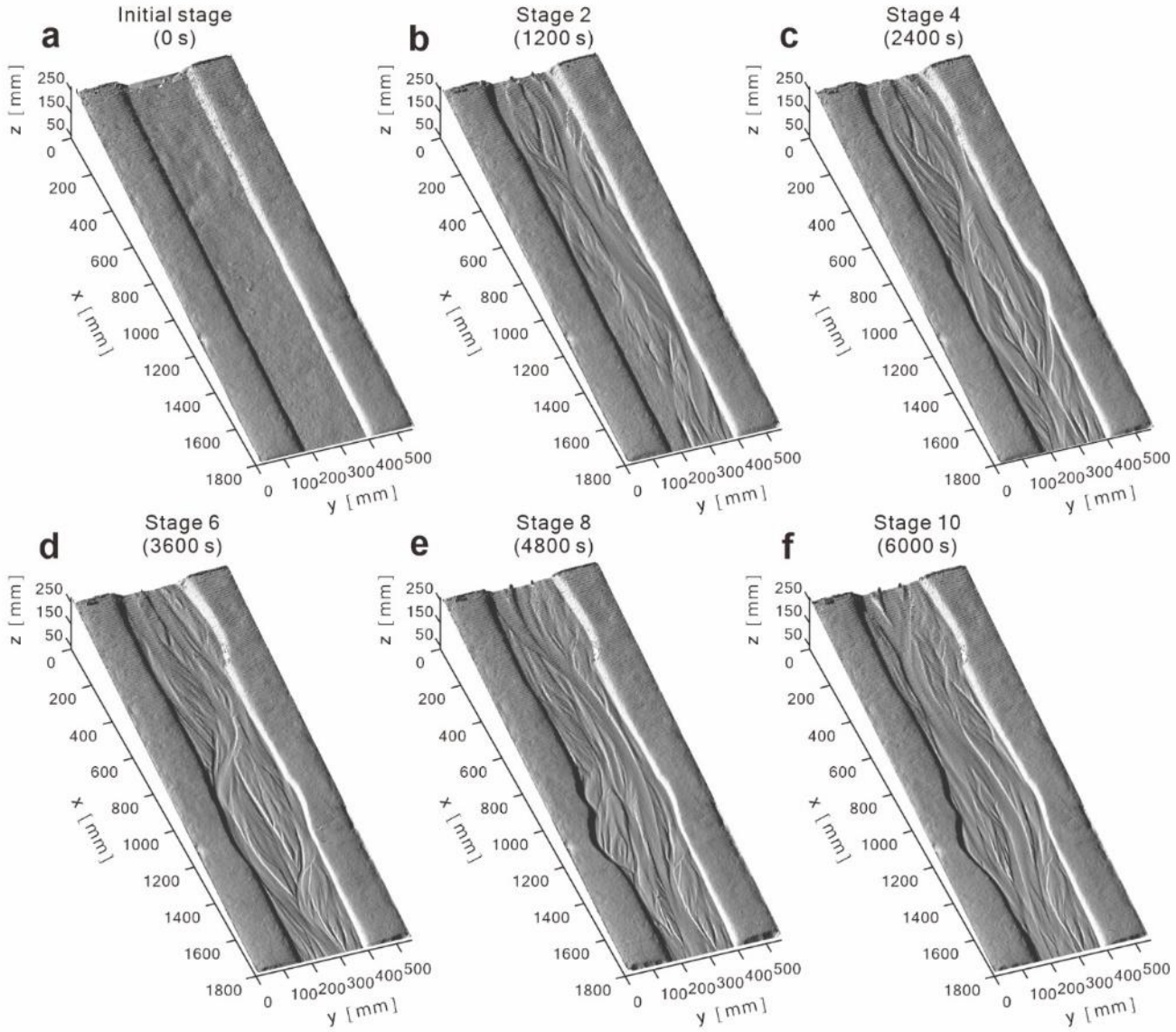

Figure S9. Hillshaded DEMs of Run B2 from t = 0 to 100 min.

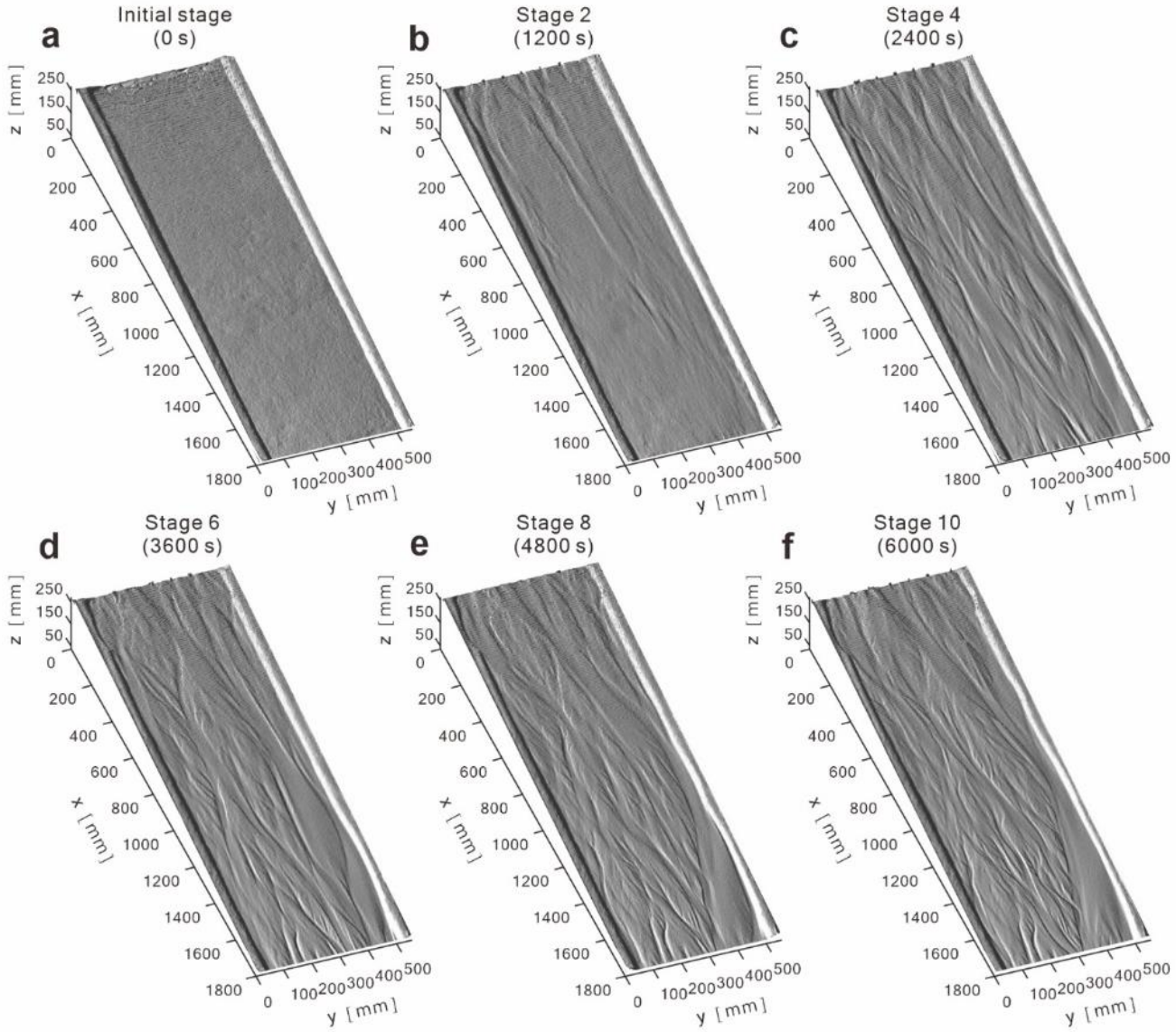

Figure S10. Hillshaded DEMs of Run B3 from t = 0 to 100 min.

Captions for Movie S1 to S6 (Files uploaded separately at:)

Movie S1. This film shows the evolution of submarine braided channels of Run A1 from *t* = 0 to 100 min. The bankfull width is 12 cm. The inflow-to-sediment ratio is around 60.

Movie S2. This film shows the evolution of submarine braided channels of Run A2 from *t* = 0 to 100 min. The bankfull width is 24 cm. The inflow-to-sediment ratio is around 60.

Movie S3. This film shows the evolution of submarine braided channels of Run A3 from *t* = 0 to 100 min. The bankfull width is 48 cm. The inflow-to-sediment ratio is around 60.

Movie S4. This film shows the evolution of submarine braided channels of Run B1 from *t* = 0 to 100 min. The bankfull width is 12 cm. The inflow-to-sediment ratio is around 90.

Movie S5. This film shows the evolution of submarine braided channels of Run B2 from *t* = 0 to 100 min. The bankfull width is 24 cm. The inflow-to-sediment ratio is around 90.

Movie S6. This film shows the evolution of submarine braided channels of Run B3 from *t* = 0 to 100 min. The bankfull width is 48 cm. The inflow-to-sediment ratio is around 90.

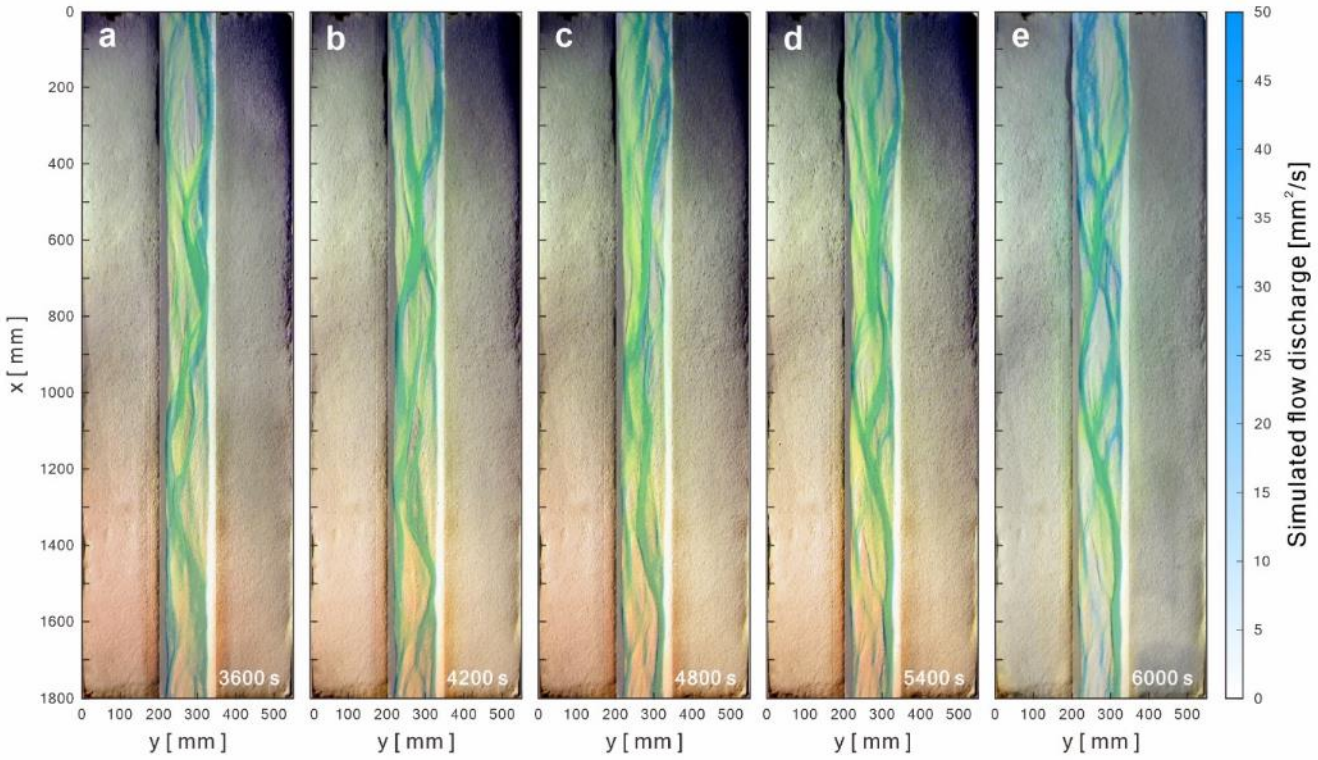

Figure S11. Comparison between simulated flow pattern and orthophoto of Run A1.

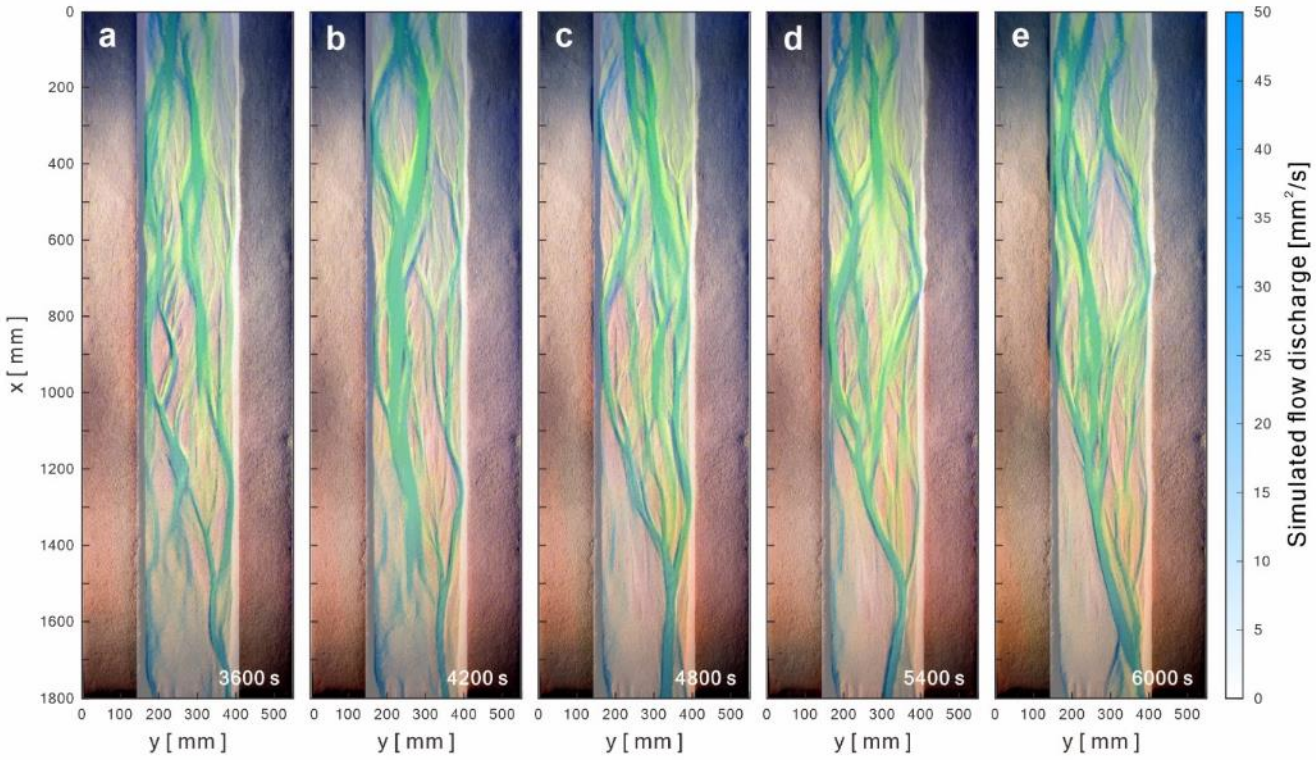

Figure S12. Comparison between simulated flow pattern and orthophoto of Run A2.

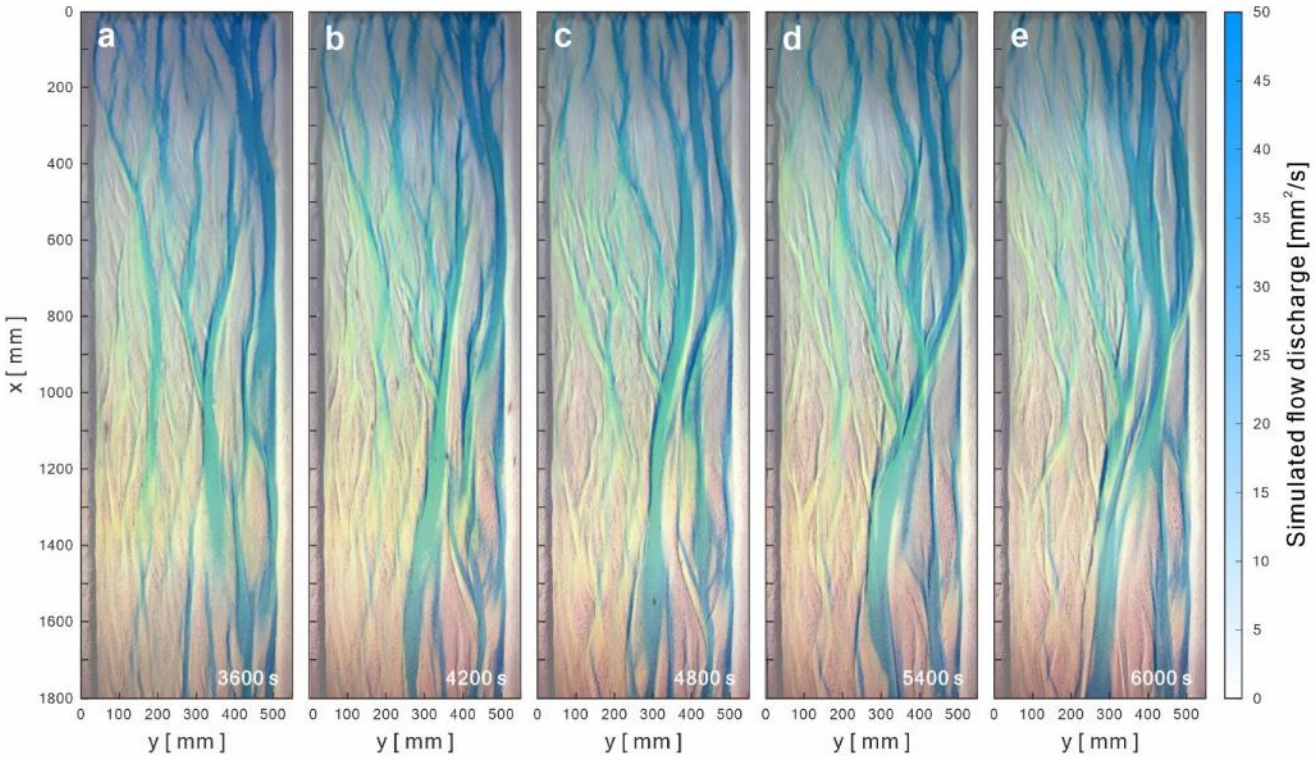

Figure S13. Comparison between simulated flow pattern and orthophoto of Run A3.

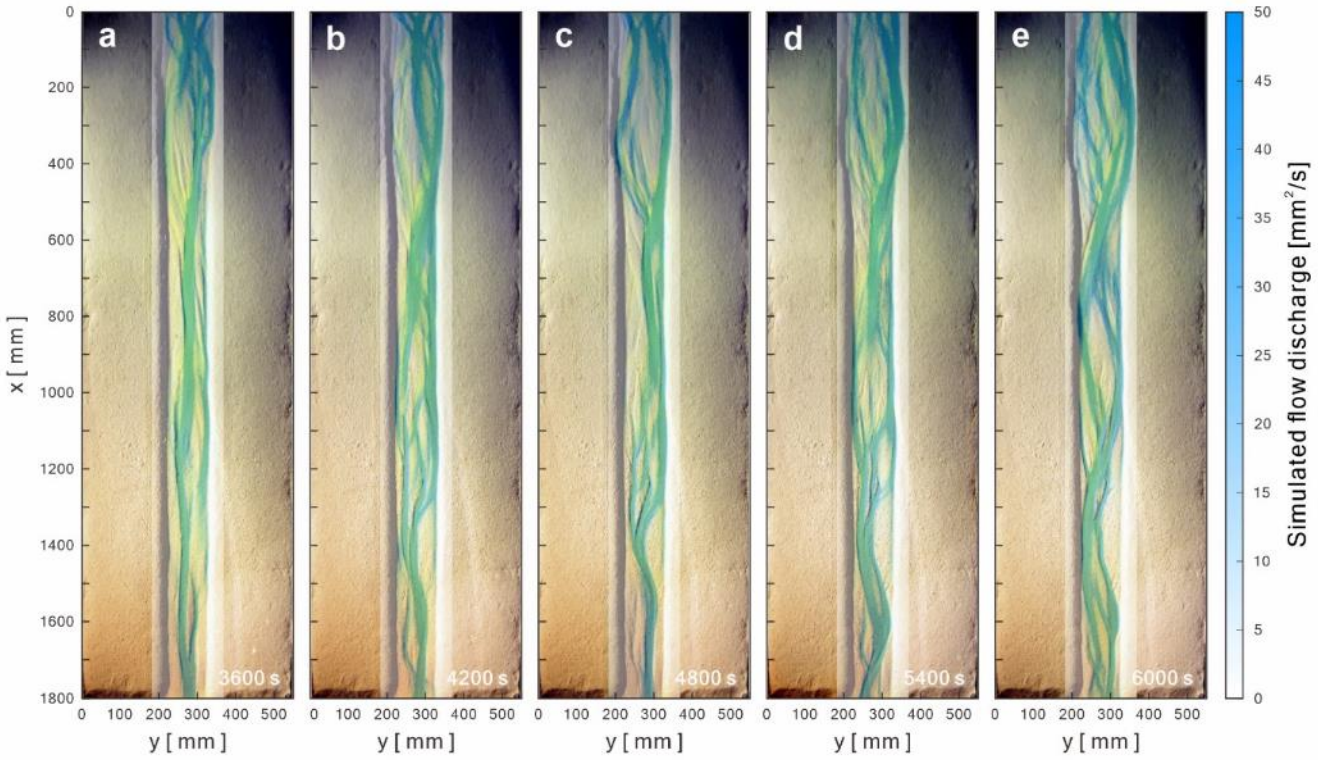

Figure S14. Comparison between simulated flow pattern and orthophoto of Run B1.

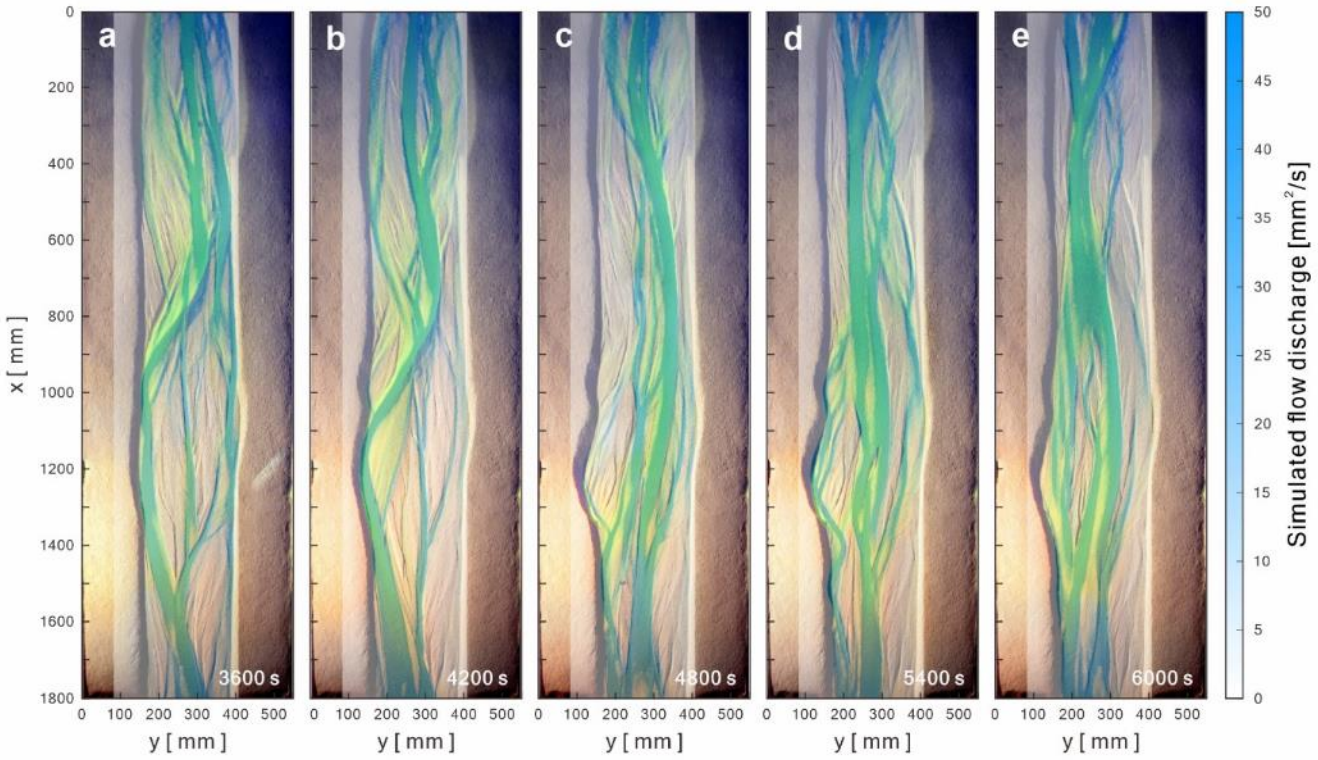

Figure S15. Comparison between simulated flow pattern and orthophoto of Run B2.

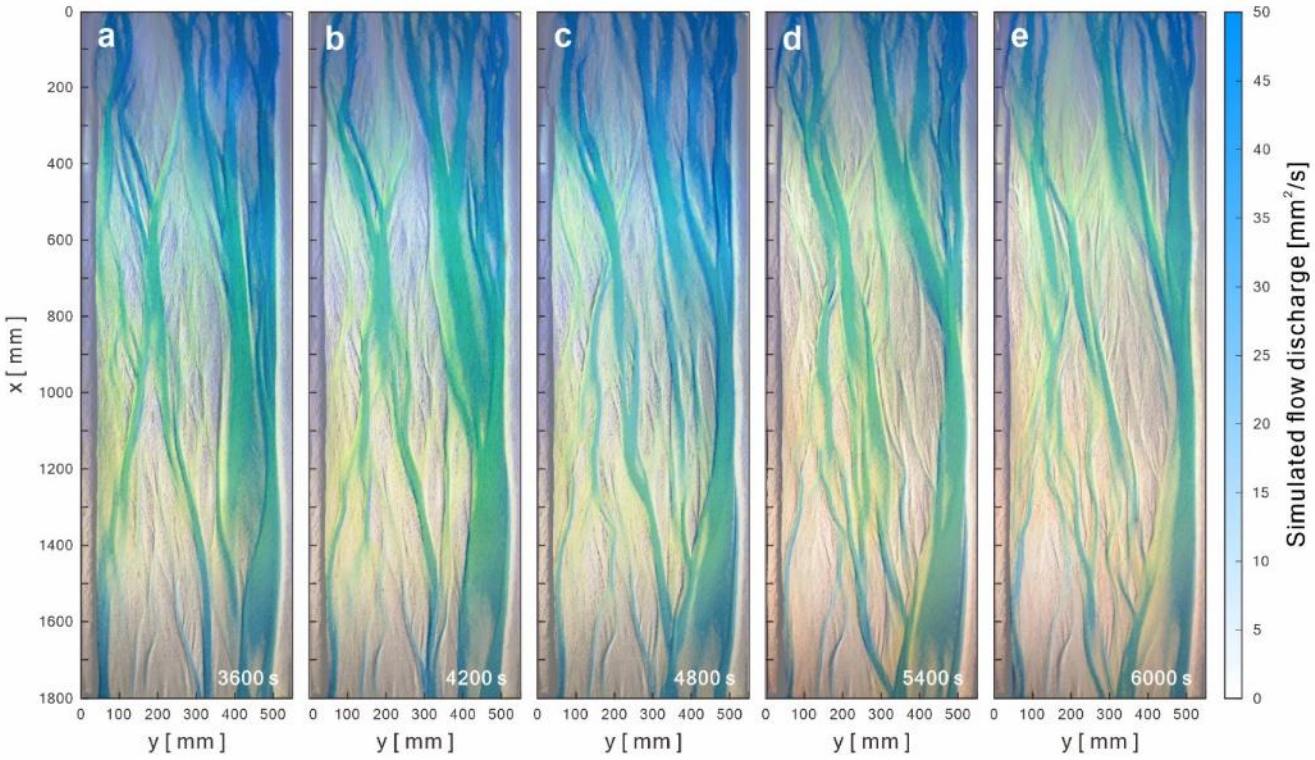

Figure S16. Comparison between simulated flow pattern and orthophoto of Run B3.

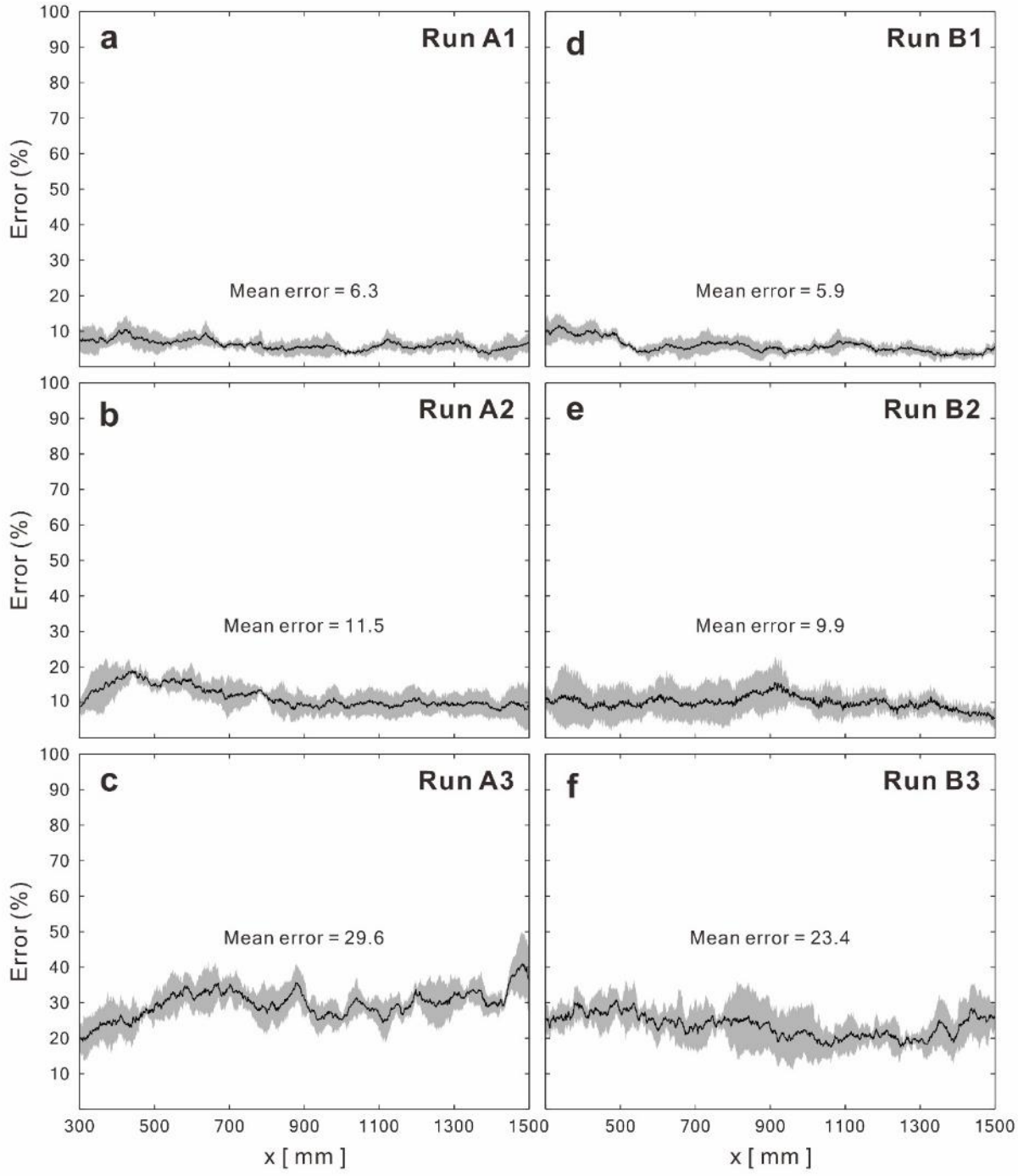

Figure S17. Error between simulations and experiments. The errors are calculated by overlapping the simulated flows patterns and experimental binarized images from x = 300 to 1500 mm, at t = 3600 to 6000 s. Black solid lines represent the mean.

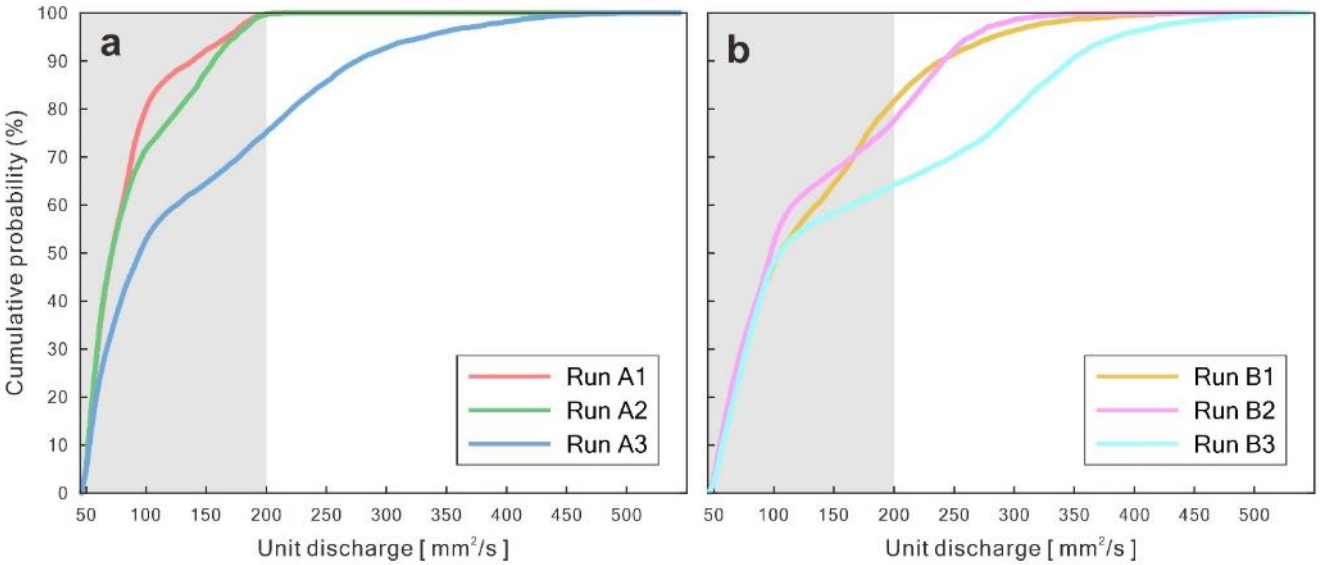

Figure S18. Cumulative probability of simulated discharge of Series 1 (a) and Series 2 (b).