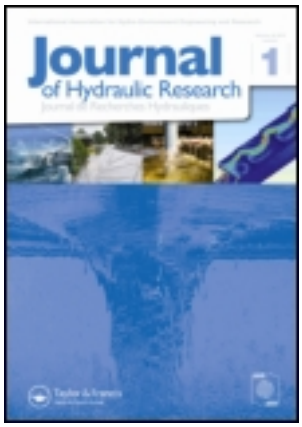

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Closure to "Propagation of Surge Waves in Channels with Large-Scale Bank Roughness" by T. Meile, J-L. Boillat and A. J. Schleiss, J. Hydraulic Res. 51(2), 195-202.

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References

Bazin, H. (1865). Recherches Expérimentales sur la Propagation des Ondes [Experimental research on wave propagation]. *Mémoires présentés par divers savants à l'Académie des Sciences Paris, France* 19, 495–644 (in French).

Chanson, H. (2010). Unsteady turbulence in tidal bores: Effects of bed roughness. *J. Waterway Port Coastal Ocean Eng.* 136(5), 247–256.

Chanson, H. (2011a). *Tidal bores, Aegir, Eagre, Mascaret, Pororoca: Theory and observations*. World Scientific, Singapore.

Chanson, H. (2011b). Undular tidal bores: Effect of channel constriction and bridge piers. *Environ. Fluid Mech.* 11(4), 385–404 (and 4 videos).

Chanson, H., Reungoat, D., Simon, B., Lubin, P. (2011). High-frequency turbulence and suspended sediment concentration measurements in the Garonne River Tidal Bore. *Estuar. Coastal Shelf Sci.* 95(2), 298–306.

Chen, S. (2003). Tidal bore in the North branch of the Changjiang estuary. Proc. Int. Conf. *Estuaries & Coasts ICEC-2003*, Hangzhou, China, 233–239, Intl Research & Training Center on Erosion & Sedimentation, ed., 8–11 November.

Dingemans, M.W. 1997. *Water wave propagation over uneven bottoms*. Advanced series on ocean engineering 13. World Scientific, Singapore.

Docherty, N.J., Chanson, H. (2012). Physical modelling of unsteady turbulence in breaking tidal bores. *J. Hydraulic Eng.* 138(5), 412–419.

Furuyama, S., Chanson, H. (2010). A numerical solution of a tidal bore flow. *Coastal Eng. J.* 52(3), 215–234.

Henderson, F.M. (1966). *Open channel flow*. MacMillan Company, New York.

Ippen, A.T., Kulin, G. (1957). The effect of boundary resistance on solitary waves. *Journal La Houille Blanche* 12(3), 390–400.

Koch, C., Chanson, H. (2009). Turbulence measurements in positive surges and bores. *J. Hydraulic Res.* 47(1), 29–40.

Liggett, J.A. (1994). *Fluid mechanics*. McGraw-Hill, New York.

Lubin, P., Chanson, H., Glockner, S. (2010). Large eddy simulation of turbulence generated by a weak breaking tidal bore. *Environ. Fluid Mech.* 10(5), 587–602.

Rouse, H. (1938). *Fluid mechanics for hydraulic engineers*. McGraw-Hill Publ., New York.

Treske, A. (1994). Undular bores (Favre-waves) in open channels – Experimental studies. *J. Hydraulic Res.* 32(3), 355–370.

Tricker, R.A.R. (1965). *Bores, breakers, waves and wakes*. American Elsevier Publ. Co., New York.

Wolanski, E., Williams, D., Spagnol, S., Chanson, H. (2004). Undular tidal bore dynamics in the daly estuary, Northern Australia. *Estuar. Coastal Shelf Sci*. 60(4), 629–636.

Closure to "Propagation of surge waves in channels with large-scale bank roughness" by TOBIAS MEILE, JEAN-LOUIS BOILLAT and ANTON J. SCHLEISS, *J. Hydraulic Res.* 51(2), 2013, 195–202.

TOBIAS MEILE, JEAN-LOUIS BOILLAT
and ANTON J. SCHLEISS

The authors thank the discusser for his interest in our work and the complementary information on the behaviour of undular surges in a channel with a local rapid constriction and expansion.

The purpose of the fundamental research by the authors was to study systematically the influence of longitudinal, uniformly distributed large-scale bank roughness, on the propagation speed and the height of the surge wave front. The study was motivated by the practical question if such morphological measures in the framework of river revitalization as lateral cavities at the banks can increase the flow resistance and the natural retention capacity of the rivers, in such a way that the ecological harmful effects of hydropeaking are attenuated. Thus, as mentioned, the study focused on the overall-effect of longitudinal, uniformly distributed large-scale bank roughness, and on surges as they occur during hydropeaking in rivers downstream of hydropower plant outfalls.

The discusser describes the effect of local transitions in the channel geometry (pertaining thus to local head losses rather than continuous along the channel), like a rapid constriction and expansion as they could occur at channel constrictions resulting from bridge abutments and piers, which was not the main focus of the author's research. Nevertheless, the authors have also observed similar flow features as the discusser, when the positive surge passes an abrupt expansion.

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