Eidgenössische Technische Hochschule Zürich
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Project or Master's Thesis
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Initiating and maintaining morphodynamic processes in river widenings

Reach-scale river widening is a restoration measure often used in channelized rivers to reactivate morphodynamic processes and increase habitat heterogeneity. In practice, questions often arise about how to best initiate the widening and how to maintain a certain level of morphodynamic activity in the long term. We know from observations of natural watercourses that wood deposits, in particular, contribute to long-term morphodynamical processes. However, most watercourses have a severely impaired wood regime, with little or no wood being transported and deposited. For this reason, attempts are being made to increase morphodynamic activity within widenings by artificially introducing large wood structures (LWS, Fig. 1).

Fig. 1: LWS influence morphological diversity (Emme River, photo: M. Mende)

In this study, hydromorphological experiments including the placement of LWS are carried out in a stream table at the VAW hydraulic laboratory. A stream table is particularly suitable for carrying out a large number of tests and for efficiently comparing many variants. The results will contribute to recommendations for the design of dynamic river widening.

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Remarks: Hydraulic laboratory experiments
Project language: English
1 student for Master's or up to 2 students for Project thesis