

Pillar scour & morphological scour

In river engineering, a distinction is made between *morphological scours*, which occur due to the channel morphology, and *structural scours* (Fig. 1). The processes that lead to the formation of these types of scours are complex and interact with each other.

For the dimensioning of structures, e.g. bridge piers, in river engineering practice the maximum expected scour depths - which are used as a basis for the dimensioning of projects - are usually determined by simple addition of the analytically determined values for the different scour types. This approach can lead to very large values and thus to overdimensioning of the protective measures.



Fig. 1: Pillar scour as well as morphological scour in a hydraulic model test (Source: VAW)

The aim of this work is to fundamentally test whether the scour overlay approach currently used in practice is correct. In recent years, VAW has carried out a number of hydraulic model tests in which both morphological scours and structural scours occurred. Within the scope of the work, these data are to be evaluated and compared with literature values as well as the common approaches in practice. In order to plausibilise the results obtained, principal tests will be carried out in a hydraulic experimental flume at VAW.

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Special:

Project-oriented work in cooperation with external partners; can also be done in English