

*Water Resources Research*

Supporting Information for

**Impacts of bridge piers on scour at downstream river training structures: submerged weir as an example**

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Descriptions for Table S1, Data set S1 and Video S1.

**Additional Supporting Information (Files uploaded separately)**

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**Introduction**

We conducted flume experiments to study the effects of an upstream circular pier on the local scour at submerged weirs. The supporting information provides Table S1, Data set S1 and Video S1.

**Table S1** summarizes the following experimental conditions and results: separation distance between the pier and the weir *L*, test time *t*, measured discharge *Q*, measured flume slope, measured tailwater flow depth *ht*, measured backwater rise *Hd*, measured upstream bed aggradation height *ha*; calculated approach flow depth *h*0, calculated approach velocity *U*0, calculated critical velocity for sediment entrainment *Uc*, approach flow Froude number *Fr*, measured average scour depth upstream (*dus\_a*) and downstream (*ds\_a*) of the submerged weir, measured maximum scour depth upstream (*dus\_m*) and downstream (*ds\_m*) of the submerged weir.

**Data set S1** includes the data of temporal clear-water scour depth upstream (*dus*) and downstream (*ds*) of the submerged weir for Test 1, 16, 24, 32, 47, 48, 49.

**Video S1** was taken during the test group 26; it plays in 500X normal speed (the flow is from right to left).