

EGU2020-4953

<https://doi.org/10.5194/egusphere-egu2020-4953>

EGU General Assembly 2020

© Author(s) 2022. This work is distributed under the Creative Commons Attribution 4.0 License.



Evaluation of various setups of hydraulic structures in wild creek by River Flow2D

Chin-Hsiang Tu¹ and **Hung-Pin Huang²**

¹Bioenvironmental systems engineering , National Taiwan University , Taiwan, Province of China (lo860207@gmail.com)

²Bioenvironmental systems engineering ,National Taiwan University , Taiwan, Province of China(benhuang@ntu.edu.tw)

In Taiwan, the hydraulic structures of ground sill, check dam and embankment are frequently used in wild creek in order to prevent longitudinal and lateral scour. The benefit of these structures could not be numerically evaluated before construction without movable bed computational software. In recent years, the downstream scour-and-fill of hydraulic structures in wild creek could be carried out by software of River Flow 2D. This study used this software to evaluate the various setups of hydraulic structures in Jianshi, Hsinchu. Before carrying out software, the unmanned aerial vehicle (UAV) was operated to capture aerial photos of watershed. Then, the digital surface model (DSM) and orthomosaic photos were produced by Pix4Dmapper. Because most of wild creeks have no vegetation on their own creek bed, the DTM could be replaced by DSM. Associated with the various setups of hydraulic structures, Global mapper, QGIS and designed rainfall data, the software of River Flow 2D could give the downstream scour-and-fill of various setups of hydraulic structures. And, the convenient setup could be selected after evaluating the various setups of hydraulic structures.