VAMONOS - Vertically-averaged models for non-hydrostatic flows.

Open-channel flow over weirs. Experimental data.

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This dataset contains the results from the experimental tests carried out at the hydraulics laboratory of the Civil Engineering School, at University of A Coruña (Spain), as part of the VAMONOS (Vertically-averaged models for non-hydrostatic flows) project (CTM2017-85171-C2-2-R). The aim of the project is the development of enhanced 2D river flow models including additional terms to account for non-hydrostatic pressure and mixed flow conditions around hydraulic structures.

This data package includes experimental results on 9 different weir geometries that were tested in an open channel. The experimental facility consists of a 15 m flume with a square cross section of 0.5 x 0.5 m. Water depths were measured with an automatic data acquisition system on a grid of approximately 125 points. Each weir was tested under two different flow conditions. In all the tests the inlet discharge was close to 30 l/s, while the downstream water level was varied from one test to another, in order to obtain fully submerged and free discharge conditions.

This dataset is structured in two pdf documents and three folders:

- *Summary_tests.pdf*. This file summarizes all the experimental tests.
- *Data_package_description.pdf*. This document includes information about the experimental facilities, the test conditions and the uploaded files.
- *Raw_data.* This folder includes the raw data recorded during the tests.
- *Matlab_files.* This folder contains three Matlab files (.m) that can be used to process the raw data and to generate some figures.
- *Processed_data.* This folder contains three documents per weir that include the results obtained after processing the raw data. For each test, it is possible to find a pdf with the weir geometry and a text file with the results of the submerged and free discharge tests.

Those interested in experimental data for the calibration of numerical models or the analysis of empirical discharge rating curves, are suggested to work only with the data included in the folder *Processed_data.*

Further details on the experimental setup are given in the document *Data_package_description.pdf.*

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