

## **WASH TREET - Hydraulic, wash-off and sediment transport experimental data obtained in an urban drainage physical model.**

This dataset contains the results from the tests carried out at a laboratory physical model in the Hydraulic Laboratory of the Centre for Technological Innovation in Construction and Civil Engineering (CITEEC) at the University of A Coruña (Spain) as part of the [WASH TREET project](#). The objective of the project is to perform a series of high-resolution experiments where urban surface wash-off and sediment transport through gully pots and pipes were accurately measured in laboratory-controlled conditions in a separate drainage system.

The experimental facility is a 36 m<sup>2</sup> full-scale street section and consists of a rainfall simulator placed over a concrete street surface with two gully pots that drain runoff into an underground pipe system. Further details of the physical model are provided in '1\_Physical\_model\_description.pdf'. Two zip files with rain intensity distributions ('2\_Rain\_intensity\_maps.zip') and model topographies ('3\_Elevation\_data.zip') complete physical model information as accurately measured inputs for hydraulic, wash-off and sediment transport experiments. '4\_Hydraulic\_tests\_description.pdf' describes experimental procedure, equipment, measuring points, results and data set files of the hydraulic characterization of the experiments. Data regarding these hydraulic tests is included in '5\_Hydraulic\_tests.zip'. In these tests, flow in both gully pots and in the pipe system outlet, and a total of 6 surface and 6 pipe depths were measured by ultrasound distance sensors for the different simulated rains.

'6\_Washoff\_tests\_description.pdf' includes information of the experimental initial conditions, the different sediment granulometries used, measuring points, experimental procedure and result files regarding wash-off and sediment transport experiments. Data files of a total of 23 tests are included in '7\_Wash-off\_tests.zip'. In these experiments, an initial mass of sediment is distributed over the model surface, and the wash-off and sediment transport processes are measured during a steady and uniform rainfall by total suspended solids (TSS) and particle size distribution (PSD) samples at the entrance of gully pots and at the pipe system outlet. Online turbidity measurements at pipe system outlet, pipe depths and flow at pipe system outlet are also measured during the experiments. Results regarding mass balances, which are performed at the end of the experiment to assess the final distribution of sediments, are also included. At last, some relevant photos and videos taken during the experiments are provided in '8\_Multimedia.zip'.

Flow measurements have been used in Naves et al. (2019) (DOI: [10.1016/j.jhydrol.2019.05.003](https://doi.org/10.1016/j.jhydrol.2019.05.003)), together with the related datasets [WASH TREET - PIV data](#) and [WASH TREET - Structure from Motion data](#), to calibrate a 2D shallow water model.

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