

## ANALYSIS OF THE MORPHOLOGICAL ACTIVITY OF THE PILCOMAYO RIVER BY MEANS OF NUMERICAL MODELING

Marcelo Heredia Gómez, Solange Rocha Boggero

### ABSTRACT

The Hydraulic Laboratory of the Universidad Mayor de San Simón in Bolivia (LHUMSS) has begun studying the morphological activity of the Pilcomayo River through the execution of physical and numerical modeling work. Numerical modeling is carried out using the Delft3D computational model. In this process, the computational model has been calibrated for the reproduction of hydrodynamic variables. The Pilcomayo River is morphologically active, with constant changes in the bed shape due to flow and high rates of suspended sediment transport. The present research work details the continuation of numerical modeling efforts on the river. The sedimentological calibration is presented, where the sediment transport observed at the Villamontes Station is reproduced, with the calibration supported by the respective statistical analysis for quantifying the residual errors between the observed and calculated values by the model, obtaining results rated as "very good" and "good" according to existing literature. Based on the calibration, the modeling of "long-term" and "short-term" morphological scenarios has been carried out, where the results show the morphological activity of the study area.

**Keywords:** Morphological Modeling, Sediment Transport, Pilcomayo River, Delft3D Computational Model.

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