

The XXXVI International School of Hydraulics, 23-26 May 2017, Jachranka, Poland

Po River morphodynamics modelled with the open-source code iRIC

M. NONES¹, A. PUGLIESE², A. DOMENEGHETTI² and M. GUERRERO²

¹ Interdepartmental Centre for Industrial Research in Building and Construction,
University of Bologna
via del Lazzaretto 15/5, 40131 Bologna, Italy
e-mail: michael.nones@unibo.it

² Department of Civil, Chemical, Environmental, and Materials Engineering
University of Bologna
Viale Risorgimento 2, 40136 Bologna, Italy

ABSTRACT

The paper presents the numerical modelling of the hydro-morphological evolution of a 10-km reach of the Po River, in Italy. The simulation is performed with the open source code iRIC, recently developed by an international community of scientists and practitioners. Starting from a non-detailed description of the studied area and using synthetic data, the reach has been modelled adopting a 2-D solver. Based on a Digital Elevation Model of the area, the domain is discretized by an unstructured grid with triangular meshes. First results show a promising capability of the model in reproducing the behaviour of the reach, both in terms of liquid flow and morphodynamics, if compared with historical data measured along the watercourse and reported in literature. Additional simulations will be performed enlarging the studied area and using detailed input data measured with traditional and innovative techniques.