



Dipartimento di Ingegneria Civile,
Ambientale, del Territorio,
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Politecnico di Bari

Michele Mossa

PROCESSI DI MESCOLOAMENTO E TRASPORTO NEI FLUSSI AMBIENTALI

Lettura a invito

Prefazione del prof. Baldassare Bacchi

MIXING AND TRANSPORT PROCESSES IN ENVIRONMENTAL FLOWS

Invited Lecture

Preface by prof. Baldassare Bacchi



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“Dilution is the Solution to Pollution”. This is a well-known English motto and this is why environmental flows characterized by dilution and mixing processes are of great interest for scientists. These notes show the present scenario of pollution and warning of our planet, a general analysis of miscible and non-miscible flows with a classification based on fundamental parameters. Successively, a theoretical analysis and experimental results of some case studies of jets in a wave environment and jets interacting with a vegetated crossflow current are presented. The potential help of field measurements and monitoring and the use of new technologies based on satellite images are also briefly described, with some case studies of our research team.

The notes show that the deeper knowledge of these complex environmental flows should be pursued for research, technical and engineering interests. Because of the increasing stress placed on water resources throughout the world, a resurgence and reinvention of hydraulic engineering should be considered, in the belief that Hydraulic research will be more and more a cooperation with other experts and that researchers must respond to the need to manage and protect natural resources. Considering all these aspects, the old motto with which this summary starts, could be changed to: **“Dilution is (not always) the Solution to Pollution”**.



Michele Mossa is full professor of Hydraulics at the Technical University of Bari (Italy) and member of the IAHR Council (The International Association for Hydro-Environment Engineering and Research). Michele Mossa's main research topics are relevant with the Environmental and Maritime Hydraulics, such as the mechanisms of waves, sea currents, local erosion processes and wastewater diffusion in the sea.