Geophysical Research Abstracts
Vol. 17, EGU2015-12945, 2015
EGU General Assembly 2015
© Author(s) 2015. CC Attribution 3.0 License.

# Benchmarking of a New Finite Volume Shallow Water Code for Accurate Tsunami Modelling

Claudia Reis (1), Stephane Clain (2), Jorge Figueiredo (2), Maria Ana Baptista (3,4), Jorge Miguel Miranda (4,5)

(1) Fundação da Fcauldade de Ciencias da Universidade de Lisboa, Portugal, (2) Universidade do Minho, Portugal, (3) Instituto Superior de Engenharia de Lisboa, Portugal, (4) Instituto Dom Luiz, Portugal, (5) Instituto Português do Mar e da Atmosfera, Portugal

Finite volume methods used to solve the shallow-water equation with source terms receive great attention on the two last decades due to its fundamental properties: the built-in conservation property, the capacity to treat correctly discontinuities and the ability to handle complex bathymetry configurations preserving the some steady-state configuration (well-balanced scheme). Nevertheless, it is still a challenge to build an efficient numerical scheme, with very few numerical artifacts (e.g. numerical diffusion) which can be used in an operational environment, and are able to better capture the dynamics of the wet-dry interface and the physical phenomenon that occur in the inundation area. We present here a new finite volume code and benchmark it against analytical and experimental results, and we test the performance of the code in the complex topographic of the Tagus Estuary, close to Lisbon, Portugal. This work is funded by the Portugal-France research agreement, through the research project FCT-ANR/MAT-NAN/0122/2012.