



Application of new climate change results to Venice tide statistics

R. Mel (1), P. Lionello (2), and A. Sterl (3)

(1) Department DICEA, University of Padova, Italy, e-mail: riccardo.mel@libero.it , (2) Department DISTEBA, University of Salento, Lecce, Italy, e-mail: piero.lionello@unisalento.it, (3) KNMI (Royal Netherlands Meteorological Institute, De Bilt, Netherlands, email: sterl@knmi.nl

An accurate study of the future tide statistic due to climate changes for the Venice Lagoon is of great importance for the historical city and its maintenance.

In this paper an analysis of a future tide and weather scenario is presented, using new high resolution meteo data just developed by EC-Earth, a Earth System Model based on the operational seasonal forecast system of the European Centre for Medium-Range Weather Forecasts (ECMWF).

These data are used as input to a tide- model that solves the shallow water equations on the Adriatic Sea, forced by the wind stress and sea level pressure fields.

The results show that tide statistic does not change. However other parameters like wind, pressure and rain could have a different statistic distribution in the future. Finally, this study proves that to analyze the behaviour of the Adriatic sea in terms of tide and wind an high resolution dataset must be used.