



The climate in the Venetian and North Adriatic region: variability, trends and change

workshop

Venice, 27-29 October 2008



TOPIC T5. Regional Climate Change

Extreme storm surges in future climate scenarios

Piero Lionello

University of Salento, Lecce, Italy

mail: piero.lionello@unile.it

Short abstract:

This contribution discusses the changes of storm surge extremes affecting the northern Adriatic coast in future climate scenarios. The analysis is based on the results of a shallow water model, which is forced by the sea level pressure and wind fields computed by a regional climate model. While in the past a post processing of the climate model results (downscaling) was needed for a reliable reproduction of extreme surge statistics, presently regional climate models have achieved a resolution sufficient for providing directly wind fields for surge simulations.

In future climate scenarios, results suggest a lower intensity of intense surge events during Fall, but higher exceptional surges in November and January. These results are substantially consistent with a previous study and with the projected changes of the storm track, but further investigations are needed for the assessment of interdecadal variability and intermodel variability. Moreover, the computed probability distribution looks marginally inaccurate, as the model overestimates the occurrence of medium intensity surge events in the present climate conditions.