



High resolution numerical simulations at the Reno rivermouth (Italy): model set up and simulations under climate change scenarios

Renata Archetti (1,2), Achilleas Samaras (2,3), M. Gabriella Gaeta (2,3), Davide Bonaldo (4), and Sandro Carniel (4)

(1) DICAM, UNIVERSITY OF BOLOGNA, BOLOGNA, ITALY (renata.archetti@unibo.it), (2) CONISMA, ITALY, (3) CIRI Edilizia e Costruzioni, UNIVERSITY OF BOLOGNA, BOLOGNA, ITALY, (4) ISMAR, CNR. VENEZIA, ITALY

The paper presents some results obtained within the framework activities foreseen by the "RITMARE Phase II" Flagship Project, one of the National Research Programmes funded by the Italian Ministry of University. More specifically, as part of the activities planned by the Research Line "Coastal erosion, vulnerability and adaptation to sea level rise and climate change", the work presents the setup and implementation of high-resolution numerical simulations of the nearshore dynamics of an Adriatic sea test site, under representative and extreme wave events and sea level rise scenarios.

The selected study site is the mouth of the Reno river, located along the coast of Emilia Romagna Region, an extremely dynamic area that in the last decades has suffered strong erosion processes and is exposed to several climate change related effects.

This first part of the presentation deals with the study site description, while in the second part the coupled wave – 2D hydrodynamics model set up and implementation (using the open-source TELEMAC suite) is discussed and presented.

In the results discussion, specific attention is devoted to simulations of expected modifications to the area dynamics as a response to expected climate change scenarios.