



Relative sea level change along the Italian coasts and projections for 2100 based on high resolution DTMs and geodetic data: implications for coastal impacts

Fabrizio Antonioli (1), Amorosi Alessandro (2), Anzidei Marco (3), Giorgio Fontolan (4), Giovanni De Falco (5), Kurt Lambeck (6), Valeria Lo Presti (1), Giuseppe Mastronuzzi (7), Enrico Serpelloni (3), and Antonio Vecchio (3)

(1) enea, Italy, (2) Università di Bologna, Italy, (3) INGV, CNT, Rome, Italy (marco.anzidei@ingv.it), (4) Università di Trieste, Italy, (5) CNR, Italy, (6) Australian National University, Australia, (7) Università di Bari, Italy

We provide projections of sea level change in Italy for the year 2100 by adding isostatic and tectonic components to the IPCC 2013 and Rahmstorf projections. We focus on 3 areas with different tectonic behaviour: the North Adriatic coast (including Venice, subsiding); the Oristano coastal Plain (Sardinia, tectonically stable) and the Mar Piccolo in the Taranto Gulf (Apulia, uplifting). For these areas are available high resolution DTMs based on LIDAR surveys, GPS and tidal data that we use to tentatively predict a detailed multitemporal flooding scenario for the year 2100.

Data are compared against predicted sea level curves providing estimates of the contribution of vertical land motion to the relative sea level change. The results are based on the most recent ANU model for the ice sheets of both hemispheres, including an alpine deglaciation model. On the basis of the eustatic, tectonic and isostatic components to the sea level change, projections are provided for marine inundation scenarios for the Italian coastal plains for the year 2100, that today are at elevations close to current sea level.