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Sea Level Rise Projections in East Mid-Adriatic Sea Area

Marijan Grgić (1), Robert Steven Nerem (2), and Tomislav Bašić (3)

(1) University of Zagreb, Faculty of Geodesy, Department of Geomatics, Croatia (marijan@geof.hr), (2) University of Colorado Boulder, Colorado Center for Astrodynamics Research, United States (nerem@colorado.edu), (3) University of Zagreb, Faculty of Geodesy, Department of Geomatics, Croatia (tbasic@geof.hr)

A rise of a global mean sea level recorded during the 20th and 21st century may have significant influence onto the densely populated low-lying coastal regions. The global sea level rise rates at around 3.3 mm a year. Recent studies detected the acceleration of the sea level rise during the last two centuries both from the satellite altimeter and tide gauge data. A relatively short observation period of a sea level change, deficiency of the reliable and consistent sea level data, especially in some world regions, and regional geophysical forces that drive the ocean circulations make projecting the sea level rise rather demanding task. This study summarizes the processes on detecting the possible impact of sea level rise by combining the current sea level surface and sea level projections based on tide gauge and satellite altimeter data, vertical land motion models, and digital elevation models derived from the in-situ data obtained by drone mapping and from the satellite topographic data. The sea level projecting was done for the 21st century in the western Mid-Adriatic Sea region in Croatia, which is of great economical and natural significance. The study detects the areas that are less prone to sea level change and encompasses the procedures and technologies needed to provide for the improvement of the future sea level rise impact studies.