



Monitoring of coastal areas using radar altimetry data: examples along the southwest of the Bay of Biscay coastline

Frédéric Frappart (1,2), Vincent Marieu (3), Alexandra Spodar (3,4), Jean-Paul Parisot (3), Arnaldo Valle-Levinson (5), and Aldo Sottolichio (3)

(1) GET-GRGS, UMR 5563, CNRS/IRD/Université de Toulouse, Observatoire Midi-Pyrénées, 14 Avenue Edouard Belin, 31400 Toulouse, France.(frappart@get.obs-mip.fr), (2) LEGOS-GRGS, UMR 5566, CNES/CNRS/IRD/Université de Toulouse, Observatoire Midi-Pyrénées, 14 Avenue Edouard Belin, 31400 Toulouse, France., (3) EPOC-OASU, UMR 5805, allée Geoffroy St Hilaire, 33615 Pessac cedex, France., (4) LOG, UMR 8187, 28 avenue Foch, 62930 Wimereux, France., (5) University of Florida. Department of Civil and Coastal Engineering. 365 Weil Hall. P.O. Box 116580. Gainesville, FL 32611, USA

Satellite radar altimetry was developed to accurately measure ocean surface topography. Important effort in the development of new applications of altimetry is oriented towards extending the capabilities of current and future altimeters as close as possible to the coast. We present two examples located along the southwest French Atlantic coast: i) the determination of the shapes of river cross sections and changes in slope related to tide intensity in the Gironde Estuary, ii) the potential of radar altimetry for the monitoring of sea level and along-track topography at low-tide in the Arcachon Bay. In both cases, the results obtained using ENVISAT (2002-2012) and SARAL (since February 2013) are validated against ancillary data (i.e. tide gauges records, LIDAR topography) and show the evolution of the performances from Ku to Ka-bands.