

Report

ESA NoR Project ID 28059d title “*Assessment of wave power using high-resolution products on the Atlantic side of France.*”

Project achievements.

The contribution of the NoR and the adoption of the Cloud environment in the work done during the project implementation was crucial for the creation of the detailed database. This allowed us to process two radar altimetry missions, CryoSat-2 and Sentinel-3A/B, with the coastal retracker SAMOSA+ in the region of the study. The data processing work was performed magisterially by the EarthConsole® of Progressive Systems.

The data were acquired and processed from January 2011 to December 2022 in the case of the CryoSat-2 mission and from January 2016 to December 2022 in the case of Sentinel-3.

The Altimetry Virtual Lab (AVL), hosted in the EarthConsole® of Progressive System, is playing a crucial role in facilitating the processing SAR Altimetry data with much more advanced algorithms than in the ESA ground Segment and facilitating the distribution of the data processed in an Open Access spirit.

The scientific outcomes of the project are:

Scientific articles

2023, Ponce de León, S.; Restano, M.; Benveniste, J. Assessment of Wave Power Density Using Sea State Climate Change Initiative Database in the French Façade. *J. Mar. Sci. Eng.* 2023,11,1970. <https://doi.org/10.3390/jmse11101970>

2024, Ponce de León S., J. Bettencourt, J. Ringwood, J. Benveniste. Assessment of combined wind and wave energy in European Coastal waters using satellite altimetry data. *Applied Ocean Research* (Under Review).

2024, S. Ponce de León, M. Restano, J. Benveniste, Assessment of wave power in the French façade inferred from high-resolution altimetry. *Remote Sensing* (in preparation), MPDI.

International Conferences

Assessment of renewable wave energy resources in the French façade coastal zone using high-resolution altimetry products. Sonia Ponce de León, Marco Restano and Jérôme Benveniste,

Coastal Altimetry Workshop (CAW13), 6-10 February 2023, Universidad de Cádiz, Spain. Oral presentation.

Renewable Wave Energy Resources Inferred from High-resolution Radar Altimetry, Sonia Ponce de León, Marco Restano, Jérôme Benveniste, **28th IUGG General Assembly**, 11-20 July 2023, Berlin, Germany. Oral presentation.

Assessment of wave power density in the French coastal zone inferred from satellite altimetry data. Sonia Ponce de León, Marco Restano, Jérôme Benveniste. **American Geophysical Union Assembly (AGU)**, Wide Open Science 2023, San Francisco, USA. Poster.

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22/12/2023