

ANALYSIS OF WAVE CHARACTERISTICS IN THE BLACK SEA BASIN USING SATELLITE ALTIMETRY DATA AND SWAN MODEL SIMULATIONS

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Rezumat. Scopul acestei lucrări este acela de a analiza parametrii de înălțime semnificativă a valului, perioada valului și lungimea valului din bazinul Mării Negre în perioada 2017 – 2021. Pentru atingerea acestui obiectiv, au fost utilizate măsurători satelitare de altimetrie din baza de date IMOS și comparate cu valorile simulărilor modelului SWAN. Rezultatele obținute în urma prelucrărilor acestor două seturi de date contribuie la înțelegerea mai aprofundată a caracteristicilor valurilor de vânt din Marea Neagră datorită importanței deosebite din punct de vedere științific, economic, politico-militar și strategic al acest spațiu geografic.

Abstract. The aim of this paper is to analyze the parameters of significant wave height, wave period and wave length in the Black Sea basin in the period 2017 – 2021. To achieve this objective, satellite altimetry measurements from the IMOS database were used and compared with the values of SWAN model simulations. The results obtained from the processing of these two data sets contribute to a more in-depth understanding of the characteristics of wind waves in the Black Sea due to the special importance from a scientific, economic, political-military and strategic point of view of this geographical space.

Keywords: Black Sea, numerical modelling, satellite altimetry

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1. Introduction

Satellite data plays a crucial role in both operational activities and scientific research, providing valuable measurements that undergo a series of processing steps. These steps include acquisition, homogenization, quality control, cross-calibration, product generation, and final quality control. Throughout this process, various algorithms are applied to derive a final gridded product.

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