

EGU21-1798, updated on 02 Aug 2021

<https://doi.org/10.5194/egusphere-egu21-1798>

EGU General Assembly 2021

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## Performance evaluation of ECMWF ERA5 Reanalysis waves in the Mediterranean Sea

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This study evaluates the performance significant wave height hindcast from ECMWF's latest atmospheric dataset ERA5 in the Mediterranean Sea. Towards this aim, in-situ products from Copernicus Marine Environment Monitoring Service are used. There are nearly 160 observation points along the Mediterranean Sea which are acquired by different institutions with fixed buoys, moorings, and fixed points. The time intervals dating back to 1980s to nowadays, with most of them belongs to the 2000s. To evaluate the verification of ERA5 wave climate with the actual observations, standard statistical metrics such as correlation coefficients ( $r$ ) are used to compare two datasets in the selected points. The analysis of two time series is done for overlapping time intervals and also for values above a certain threshold, with the purpose of measuring ERA5's predictive performance of storm conditions. Preliminary results showed that the observations and numerical results of ERA5 are relatively well-matched. The average correlation coefficient is  $r=0.8$  for the selected points which are spatially disperse in the basin. In the Aegean Sea, the coefficient is calculated as  $r=0.83$  between the observations and ERA5, from a moored surface buoy near the Mykonos island with the time coverage of between 2001 and 2019. Some other examples can be given from the Adriatic Sea ( $r=0.90$ , 2013-2014), Tyrrhenian Sea ( $r=0.96$ , 2013-2015), Northwestern part of the basin ( $r=0.71$ , 2007-2019), and Balearic Sea ( $r=0.81$ , 2004-2019).