

Introduction

This study will give an overview of high resolution Irish local scale models. The Irish Marine Institute implemented the Regional Ocean Modelling System (ROMS) to coastal waters on the west coast of Ireland. Out of the total of six models, details of three will be presented. The models are: Clew Bay, Connemara, Galway Bay with most recent developments include the implementation of wetting/drying algorithm.

Methods

Details of the set-up of each model configuration, as regards the forcing functions, the choice of boundary conditions, atmospheric forcing, advection schemes, turbulence schemes, will be presented. The authors will report on the findings in terms of the computational efficiency and the changes to all models skill. The observational platforms comprise of tide gauges, ADCPs and temperature and salinity sensors.

Results

Implementation of a realistic bathymetry for Connemara wetting/drying algorithm has resulted in better validation against ADCPs. The Connemara and Galway Bay models are forced with improved freshwater discharge prescriptions. The 3-D models have tested with different atmospheric and boundary forcing such as MÉRA (Met Éireann Re-Analysis – Climate Re-analysis), ECMWF (European Centre for Medium Range Weather Forecasts) and CMEMS <https://marine.copernicus.eu/>.

Conclusion

Output data from the Irish system models provides services to numerous stakeholders, e.g. the aquaculture, search and rescue, oyster restoration efforts.