



Numerical model resolution impact on surface currents skill score: verification on HF radar and ADCP observations

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We present two separate nested modeling chains for the Adriatic basin and perform surface current verification (correlation, RMSD, ME) against available observations in the Gulf of Trieste. The observations consist of a 6-month timeseries of hourly HF radar measurements and observations from an Acoustic Doppler Current Profiler (ADCP), mounted at the coastal buoy station in the southern part of the Gulf.

The models employed are NEMO and ROMS. Members of the NEMO modelling chain are one-way nested regional setups with increasingly higher resolutions (Adriatic domain: 1/72 degrees, North Adriatic domain: 1/216 degrees, Gulf of Trieste domain: 1/648 degrees). Adriatic setup obtains lateral conditions (from CMEMS MFS) and the TPXO8 tides (from OTPS tidal inversion model) at the open boundary. North Adriatic and Gulf of Trieste setups obtain their ocean forcing from Adriatic and North Adriatic setup, respectively. All NEMO models are forced with regional Aladin SI 4.4 km atmospheric output.

Members of the ROMS modelling chain are two one-way nested regional setups for the Adriatic basin (1/60 degree) and Gulf of Trieste (1/300 degree). Adriatic setup obtains lateral conditions (from CMEMS MFS) and the TPXO8 tides (from OTPS tidal inversion model) at the open boundary. Atmospheric forcing for ROMS is obtained from ECMWF T1279 historical forecasts.