

Intercomparison of operational wave forecasting systems against
in-situ observations: data from BoM, DMI, DWD, ECCC,
ECMWF, JMA, LPOS, METEOAM, METFR, METNO, NCEP,
NZMS, PRTOS, SHNSM, UKMO.

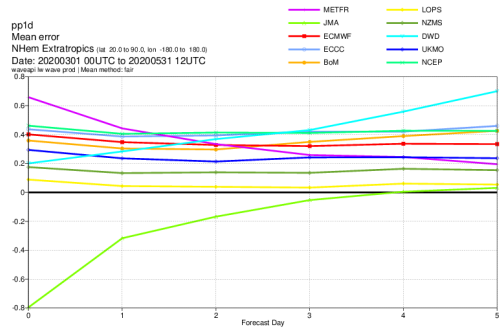
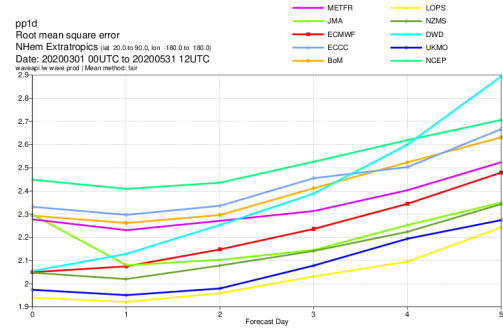
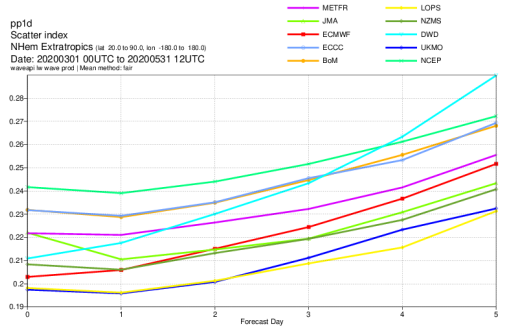
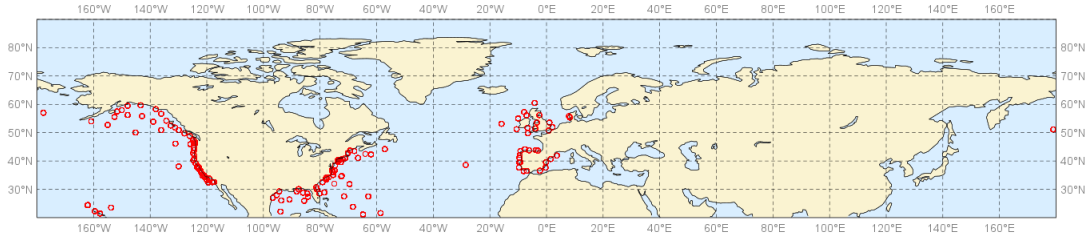
00 and 12 UTC runs

WMO Lead Centre for Wave Forecast Verification LC-WFV,
European Centre for Medium-Range Weather Forecasts ECMWF

June 17, 2020

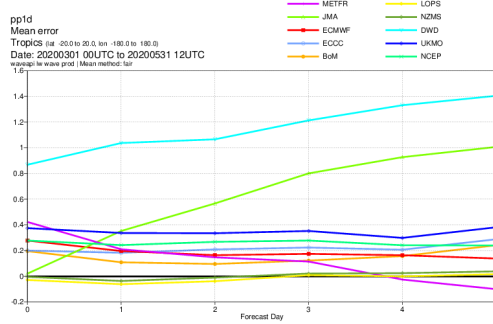
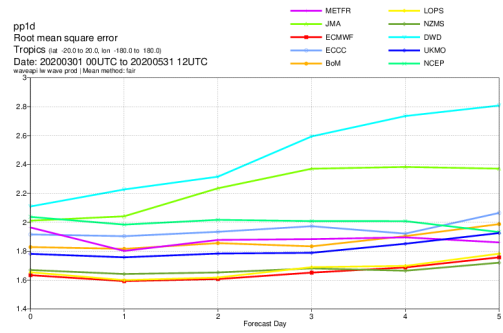
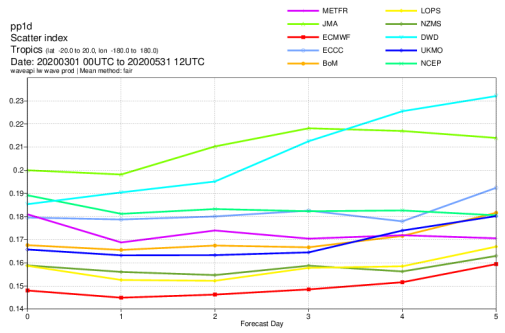
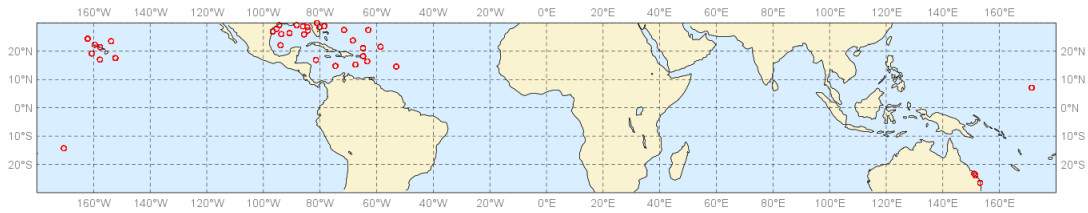
PART II: Peak wave period (PP1D)

Buoys observations - from 20200301 to 20200531 - (pp1d)



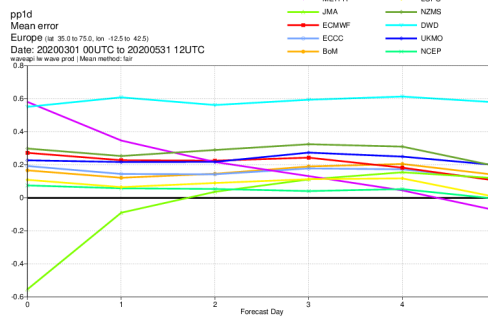
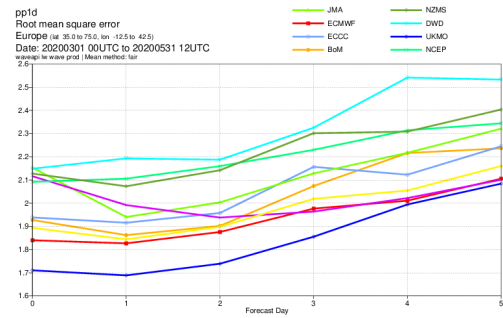
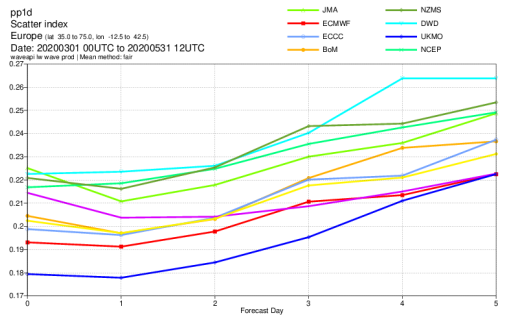
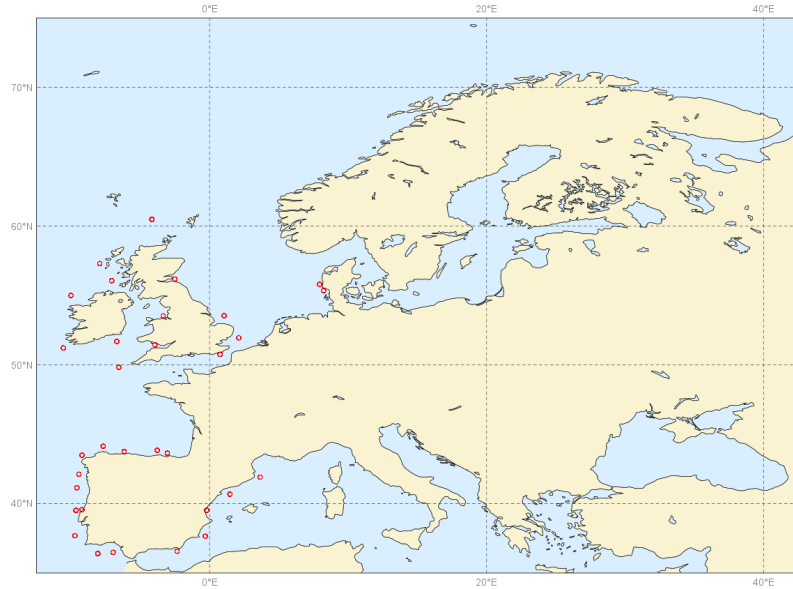
Northern Hemisphere. Top panel: observation distribution. Middle left panel: Forecast scatter index (standard deviation of the difference normalised by the mean of the observations). Middle right panel: Forecast root mean square error (RMSE). Bottom panel: forecast mean error (bias).

Buoys observations - from 20200301 to 20200531 - (pp1d)



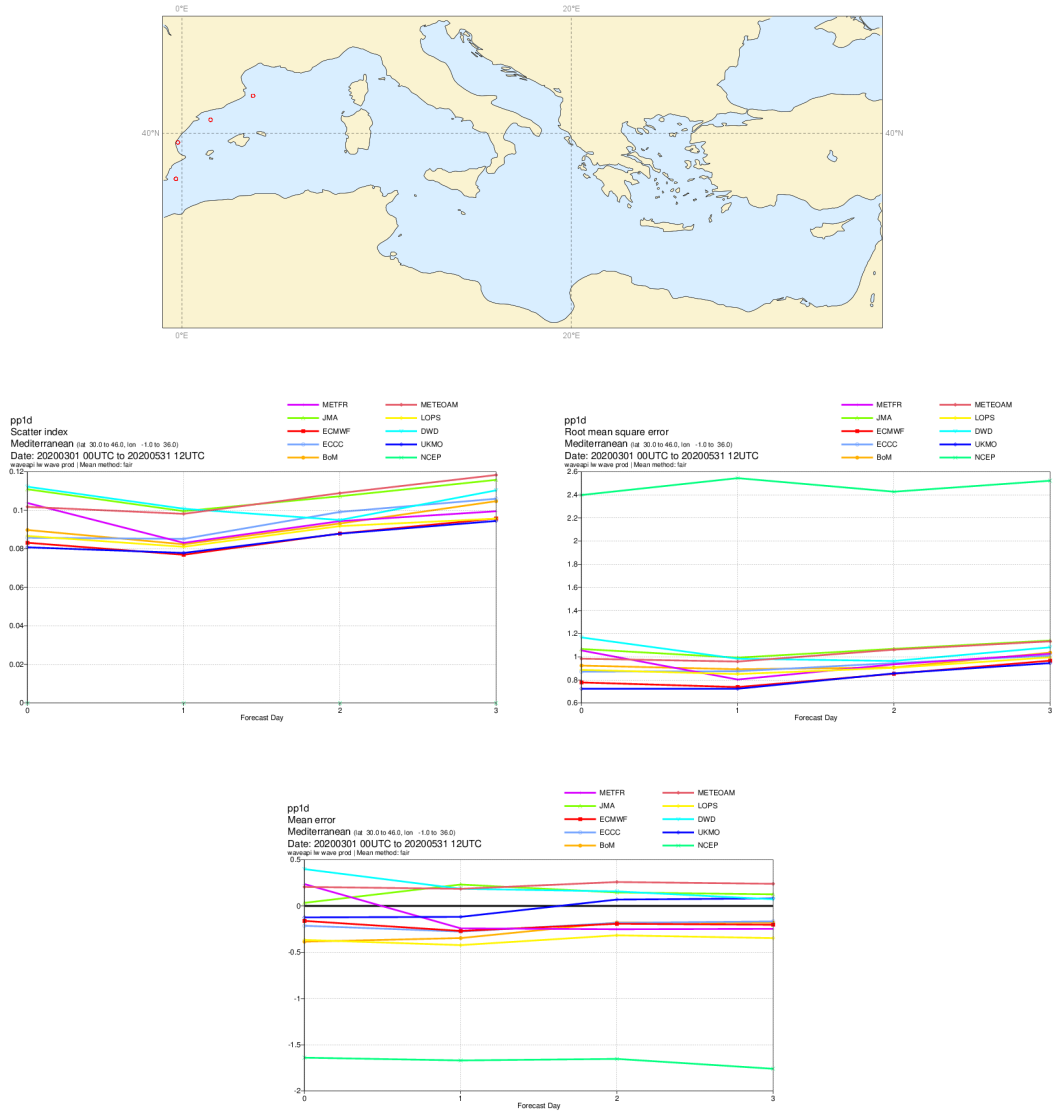
Tropics. Top panel: observation distribution. Middle left panel: Forecast scatter index (standard deviation of the difference normalised by the mean of the observations). Middle right panel: Forecast root mean square error (RMSE). Bottom panel: forecast mean error (bias).

Buoys observations - from 20200301 to 20200531 - (pp1d)



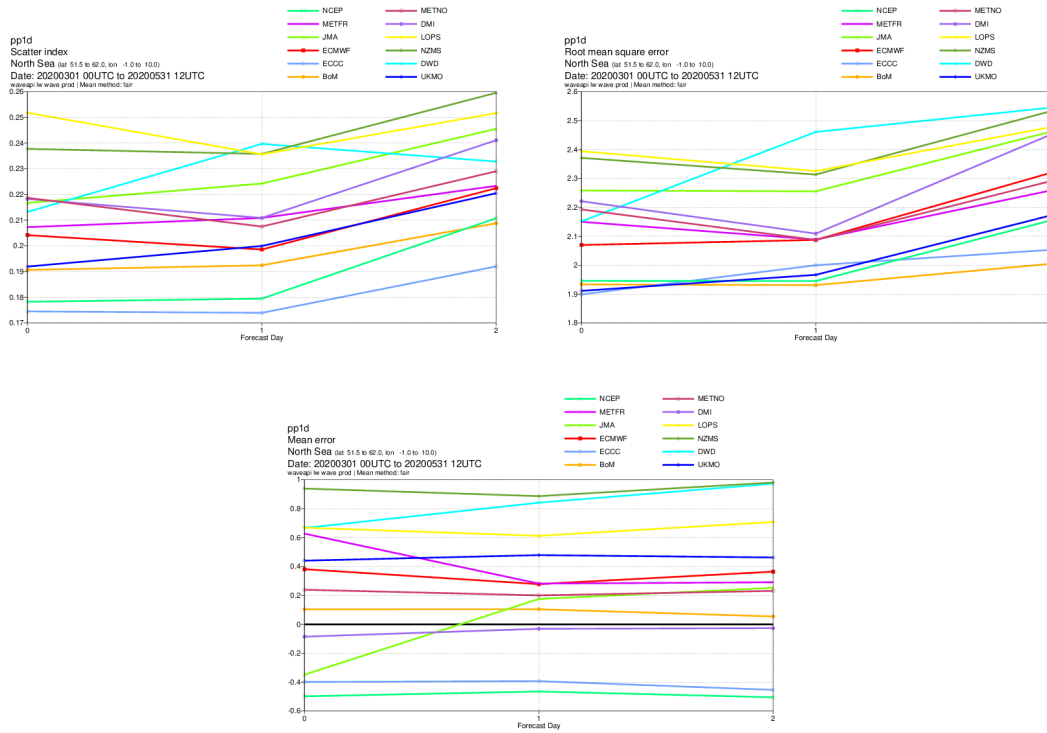
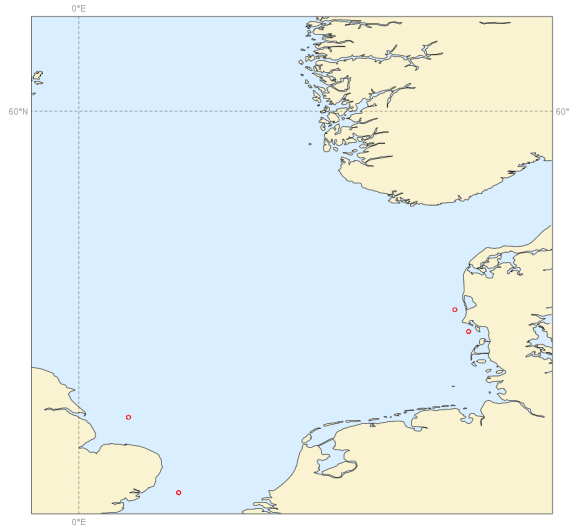
Europe. Top panel: observation distribution. Middle left panel: Forecast scatter index (standard deviation of the difference normalised by the mean of the observations). Middle right panel: Forecast root mean square error (RMSE). Bottom panel: forecast mean error (bias).

Buoys observations - from 20200301 to 20200531 - (pp1d)



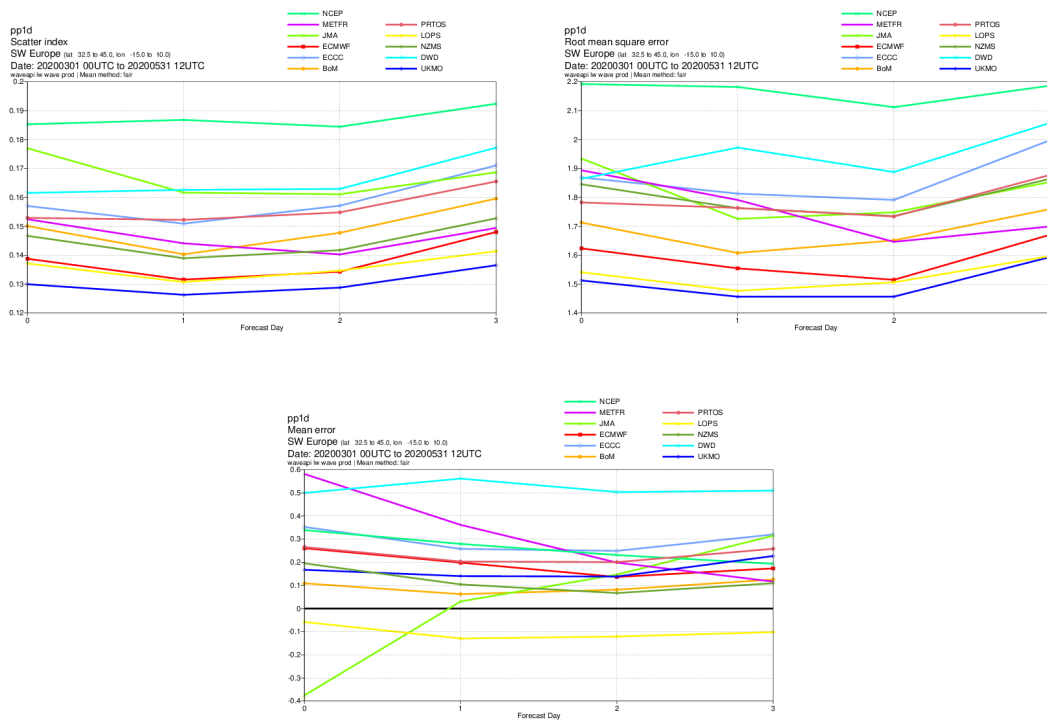
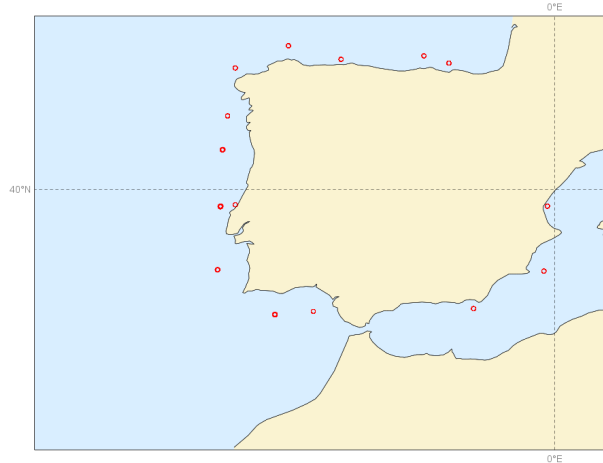
Mediterranean Sea. Top panel: observation distribution. Middle left panel: Forecast scatter index (standard deviation of the difference normalised by the mean of the observations). Middle right panel: Forecast root mean square error (RMSE). Bottom panel: forecast mean error (bias).

Buoys observations - from 20200301 to 20200531 - (pp1d)



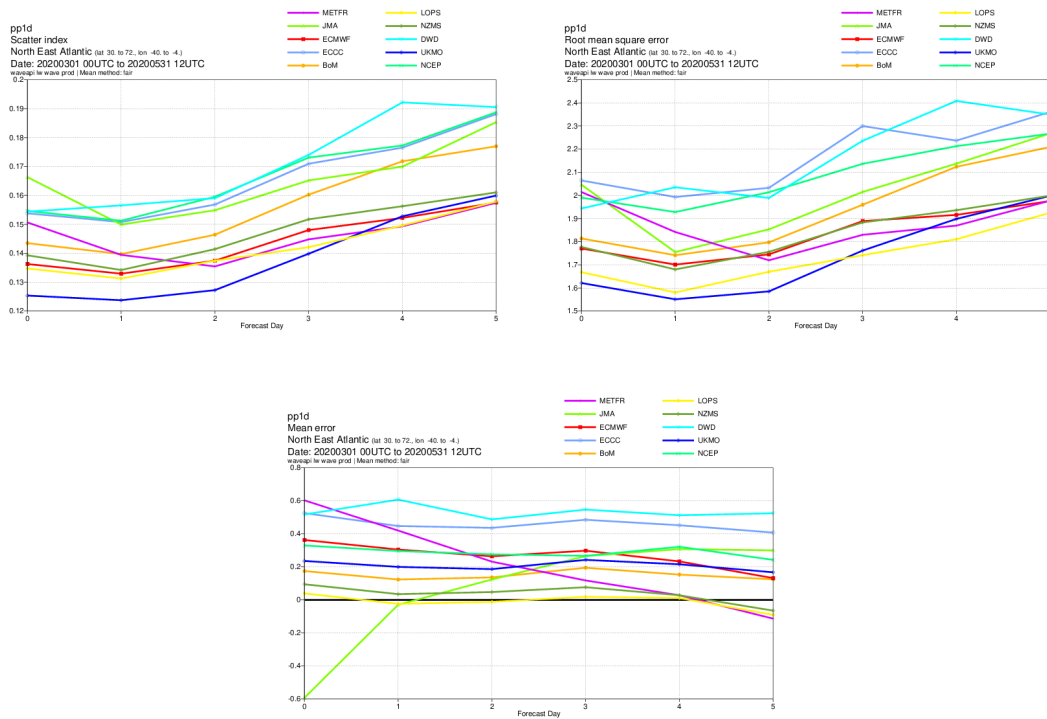
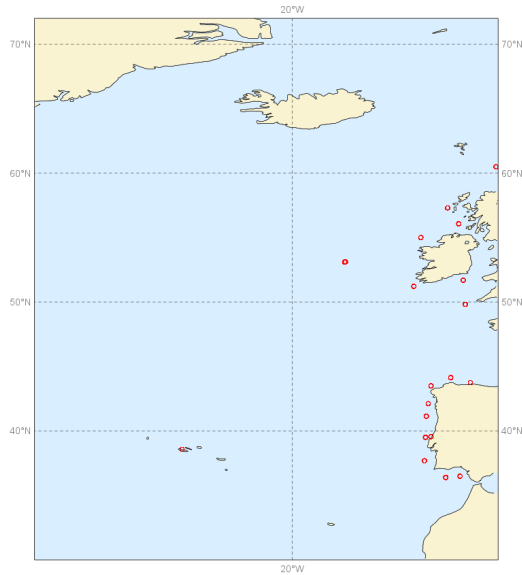
North Sea. Top panel: observation distribution. Middle left panel: Forecast scatter index (standard deviation of the difference normalised by the mean of the observations). Middle right panel: Forecast root mean square error (RMSE). Bottom panel: forecast mean error (bias).

Buoys observations - from 20200301 to 2020



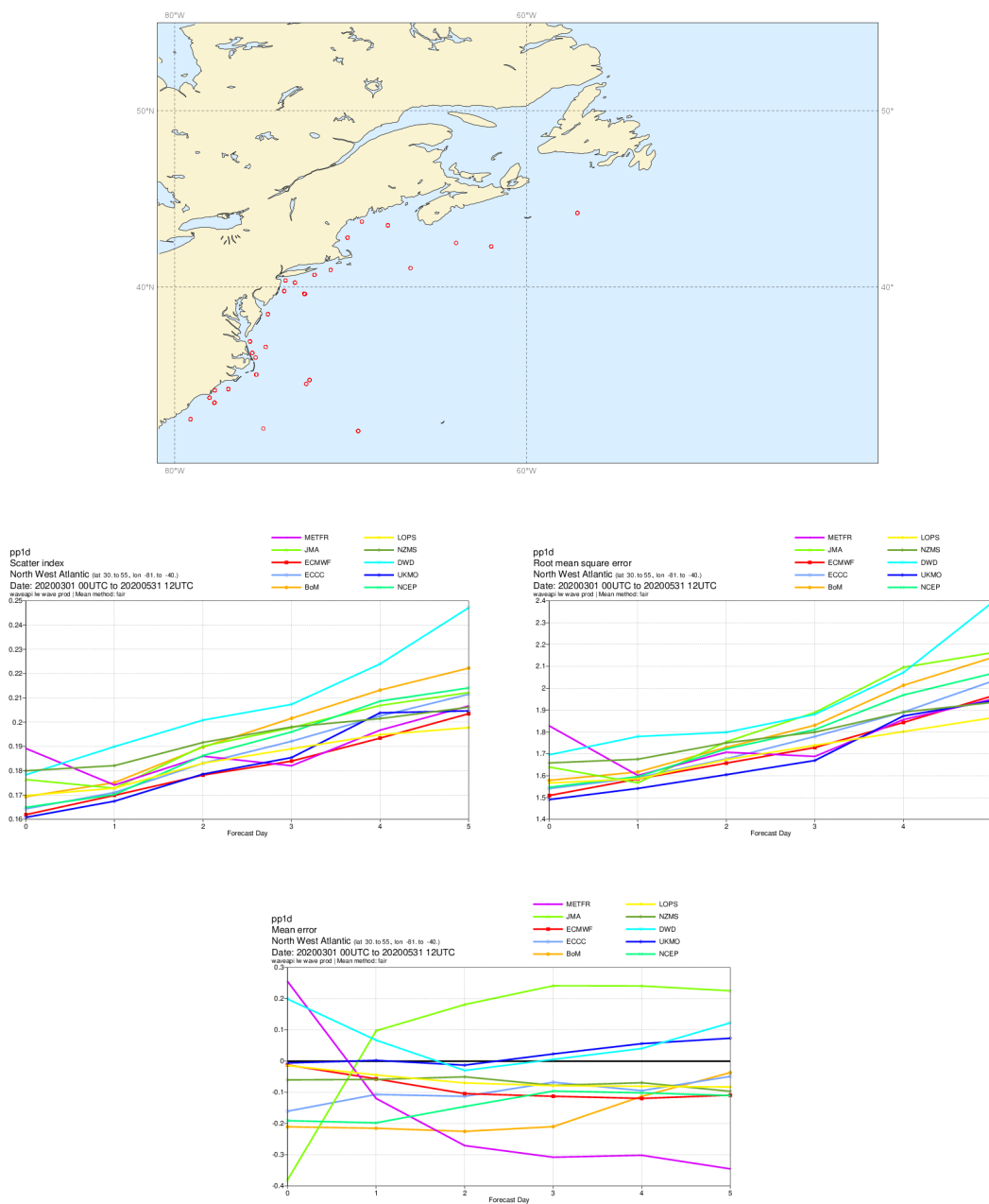
South West Europe. Top panel: observation distribution. Middle left panel: Forecast scatter index (standard deviation of the difference normalised by the mean of the observations). Middle right panel: Forecast root mean square error (RMSE). Bottom panel: forecast mean error (bias).

Buoys observations - from 20200301 to 20200531 - (pp1d)



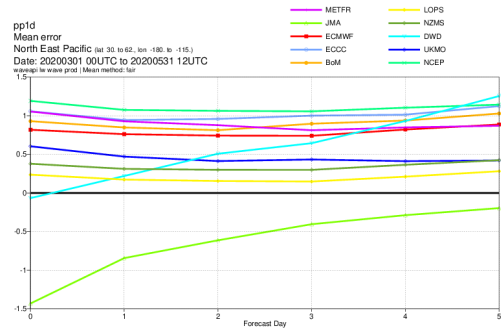
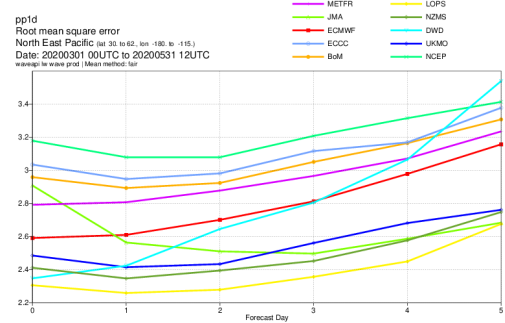
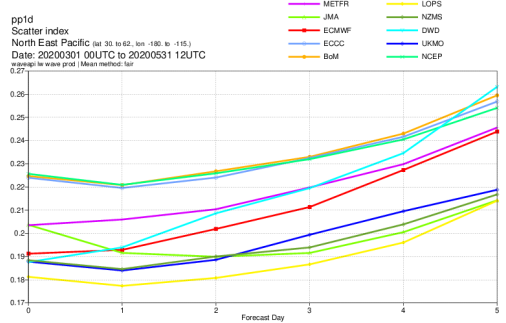
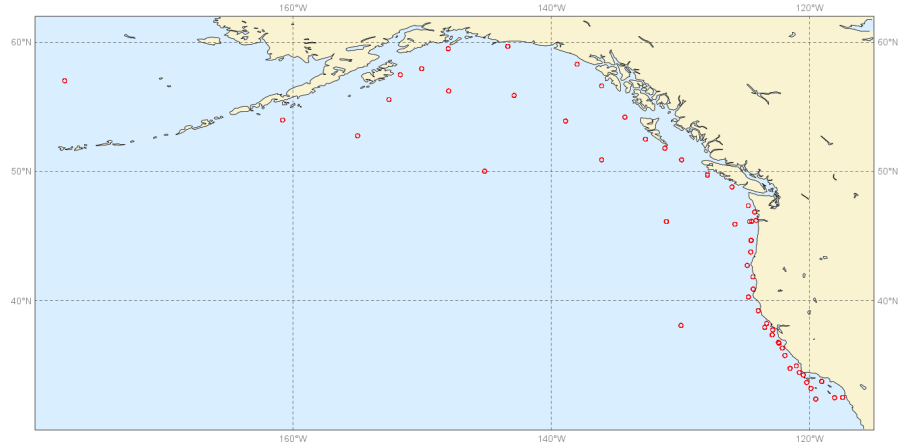
North East Atlantic. Top panel: observation distribution. Middle left panel: Forecast scatter index (standard deviation of the difference normalised by the mean of the observations). Middle right panel: Forecast root mean square error (RMSE). Bottom panel: forecast mean error (bias).

Buoys observations - from 20200301 to 20200531 - (pp1d)



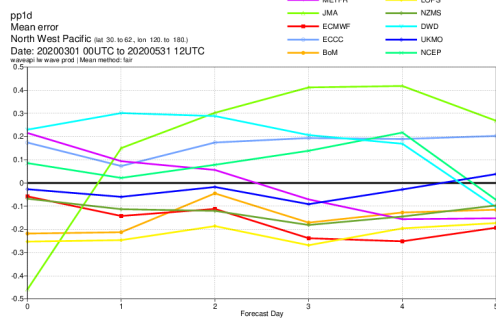
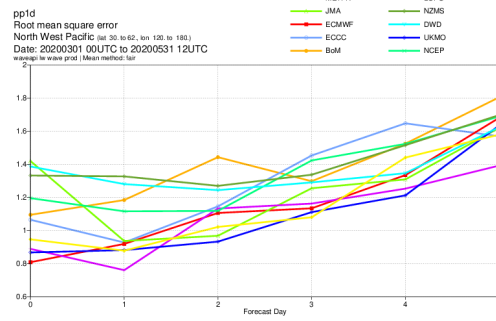
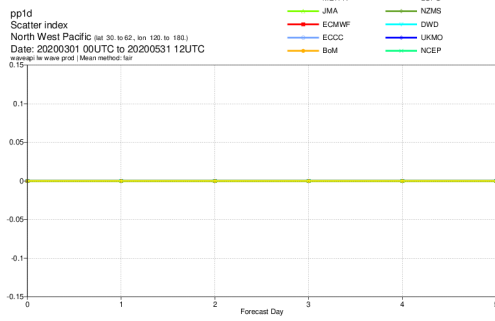
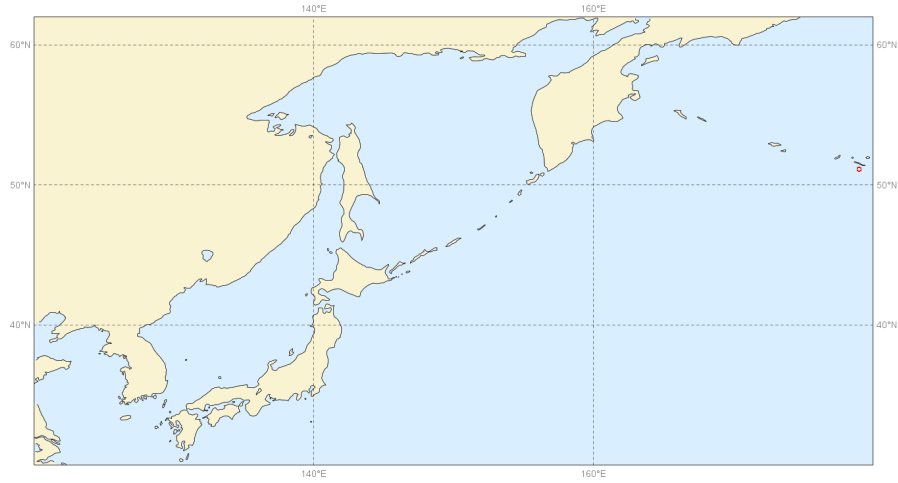
North West Atlantic. Top panel: observation distribution. Middle left panel: Forecast scatter index (standard deviation of the difference normalised by the mean of the observations). Middle right panel: Forecast root mean square error (RMSE). Bottom panel: forecast mean error (bias).

Buoys observations - from 20200301 to 20200531 - (pp1d)



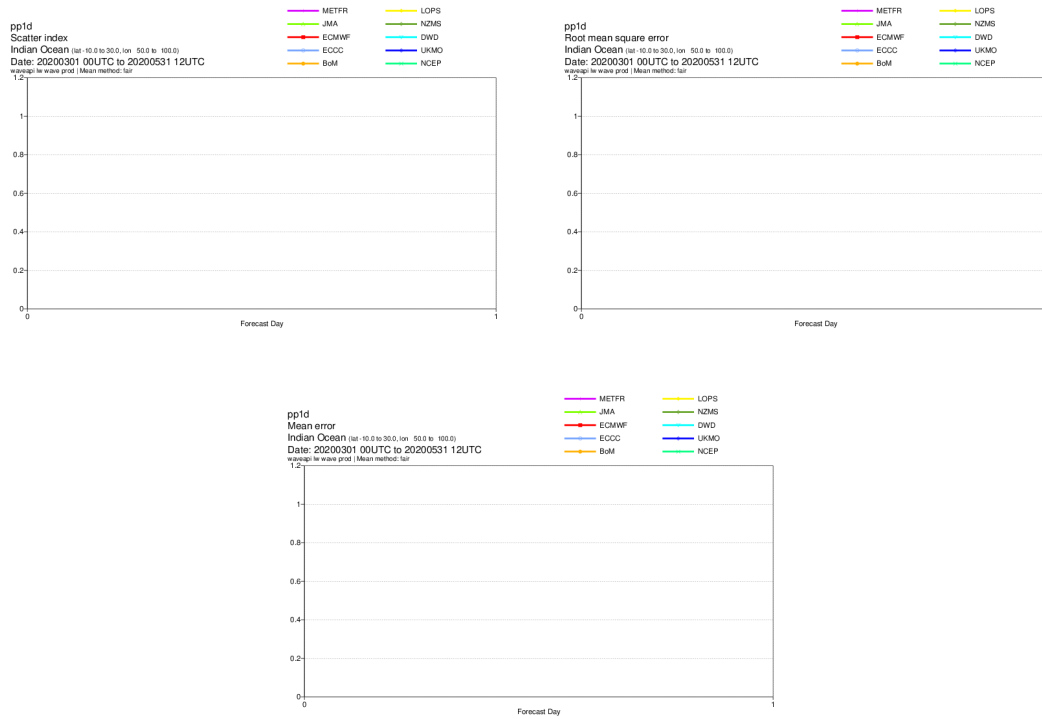
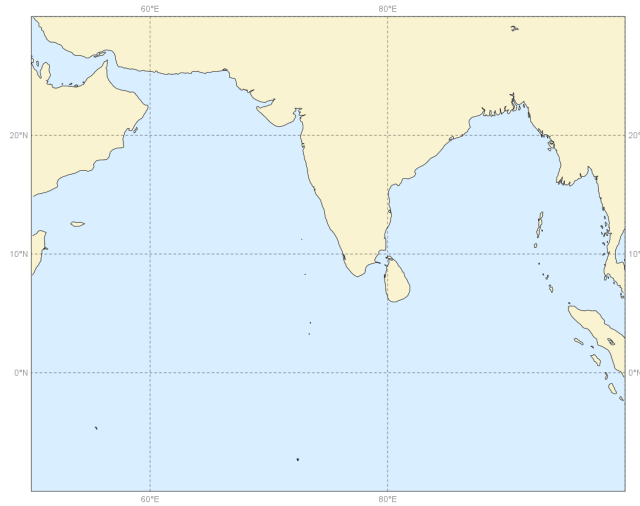
North East Pacific. Top panel: observation distribution. Middle left panel: Forecast scatter index (standard deviation of the difference normalised by the mean of the observations). Middle right panel: Forecast root mean square error (RMSE). Bottom panel: forecast mean error (bias).

Buoys observations - from 20200301 to 20200531 - (pp1d)



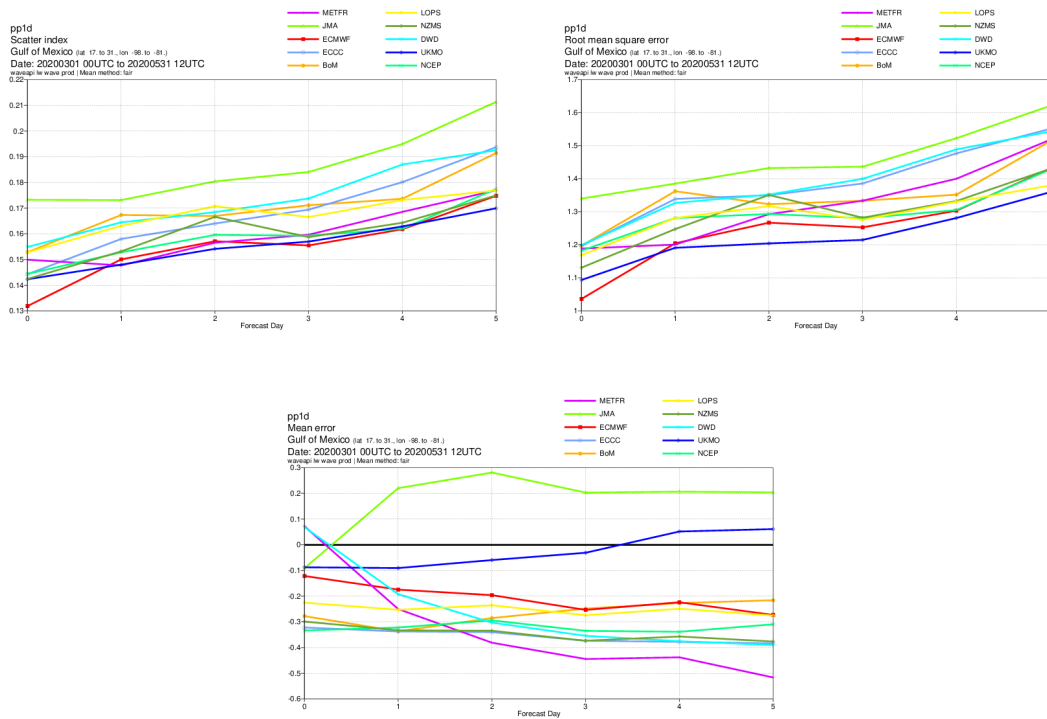
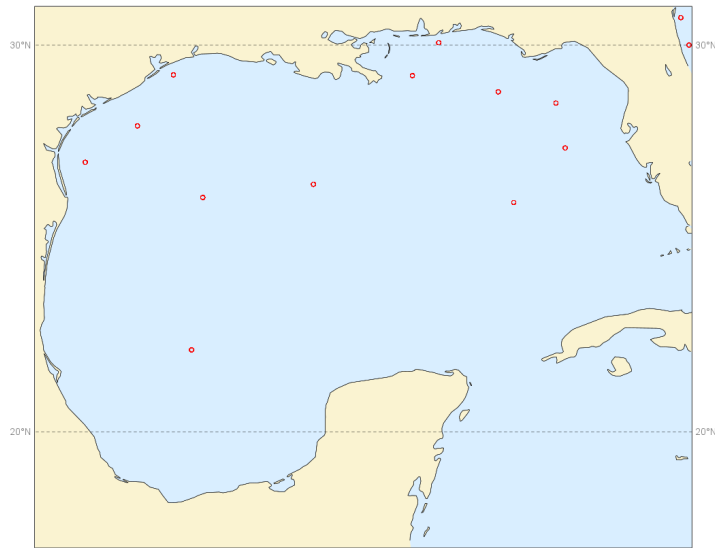
North West Pacific. Top panel: observation distribution. Middle left panel: Forecast scatter index (standard deviation of the difference normalised by the mean of the observations). Middle right panel: Forecast root mean square error (RMSE). Bottom panel: forecast mean error (bias).

Buoys observations - from 20200301 to 20200531 - (pp1d)



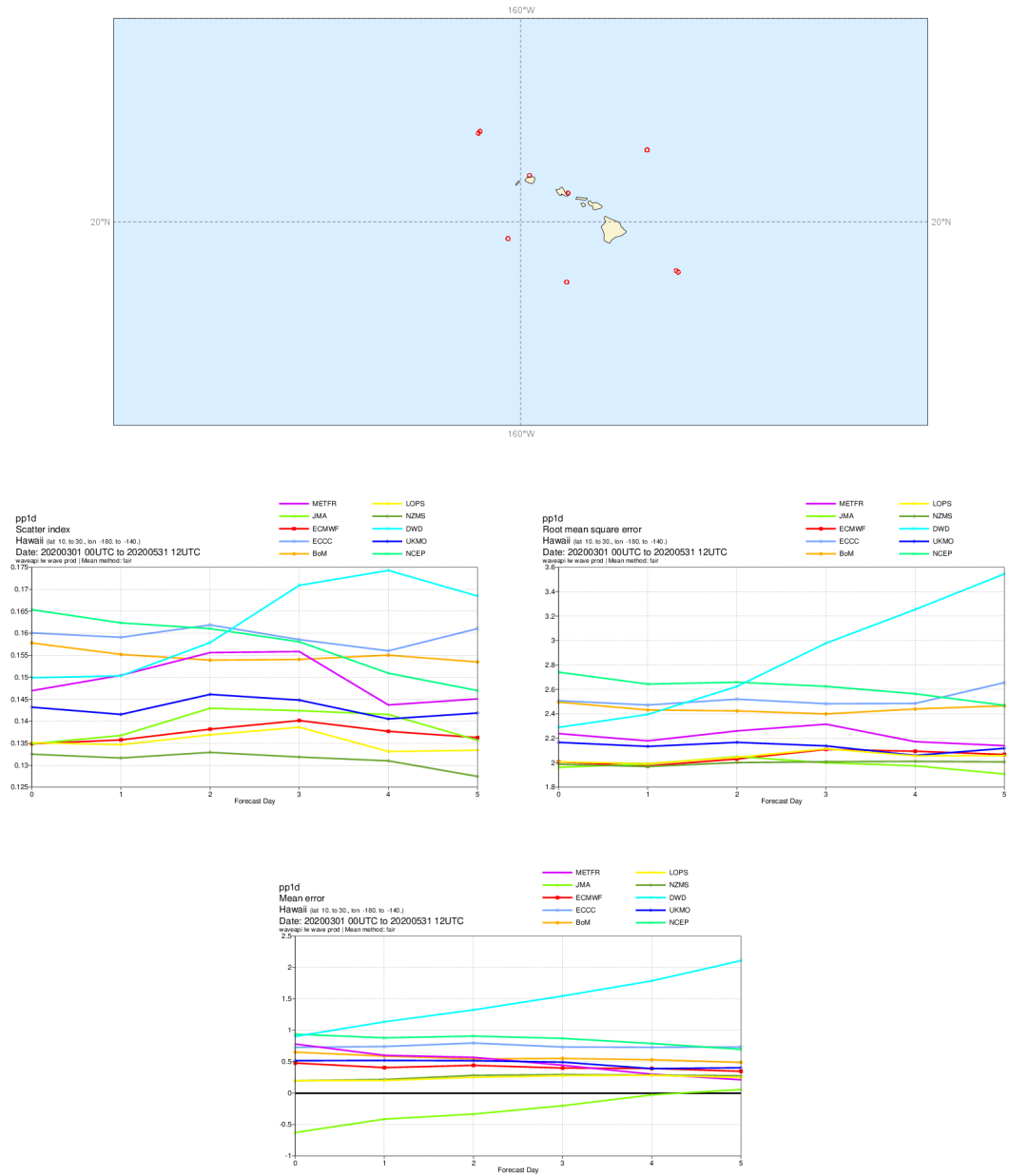
Indian Ocean. Top panel: observation distribution. Middle left panel: Forecast scatter index (standard deviation of the difference normalised by the mean of the observations). Middle right panel: Forecast root mean square error (RMSE). Bottom panel: forecast mean error (bias).

Buoys observations - from 20200301 to 20200531 - (pp1d)



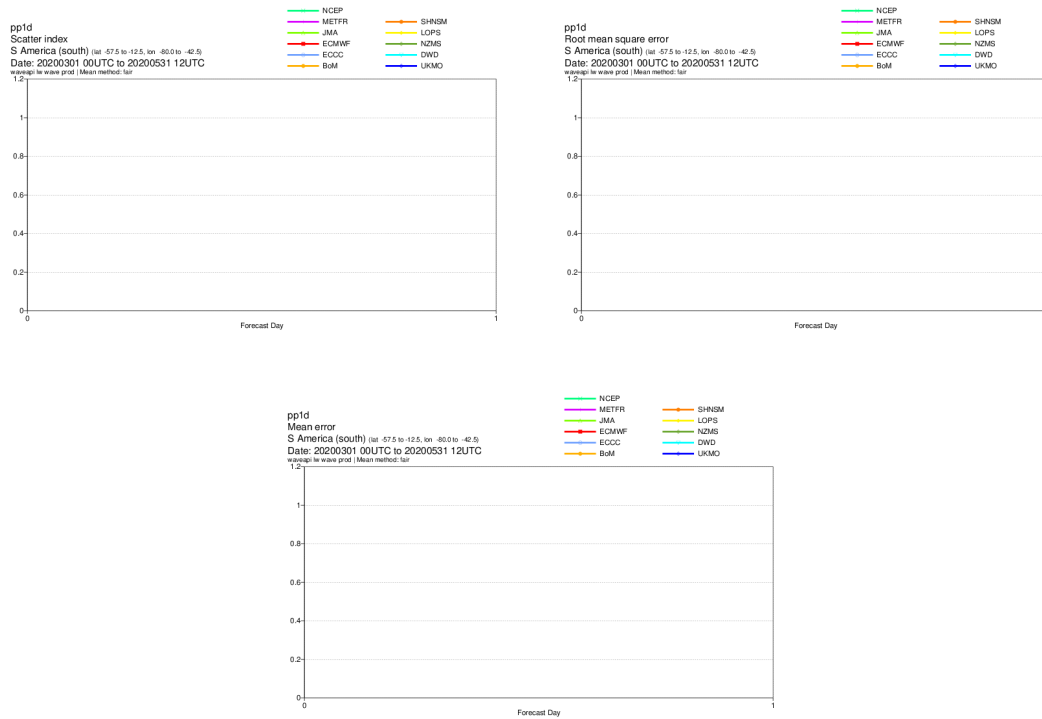
Gulf of Mexico. Top panel: observation distribution. Middle left panel: Forecast scatter index (standard deviation of the difference normalised by the mean of the observations). Middle right panel: Forecast root mean square error (RMSE). Bottom panel: forecast mean error (bias).

Buoys observations - from 20200301 to 20200531 - (pp1d)



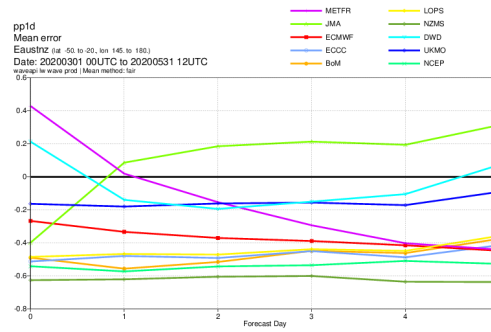
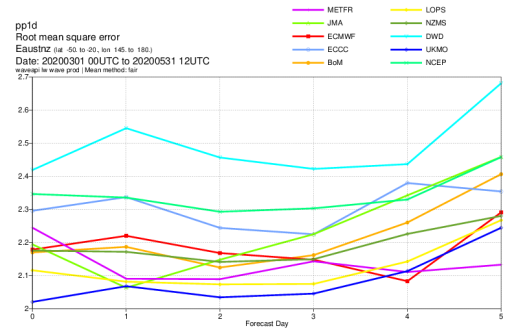
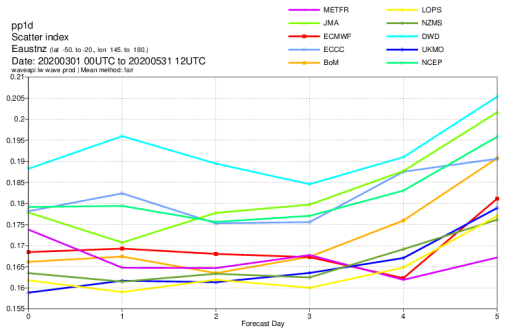
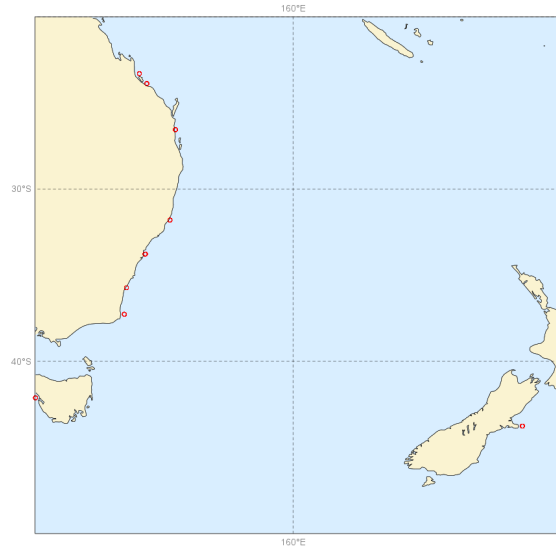
Hawaii. Top panel: observation distribution. Middle left panel: Forecast scatter index (standard deviation of the difference normalised by the mean of the observations). Middle right panel: Forecast root mean square error (RMSE). Bottom panel: forecast mean error (bias).

Buoys observations - from 20200301 to 20200531 - (pp1d)



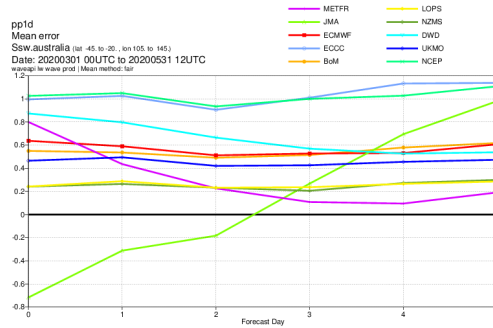
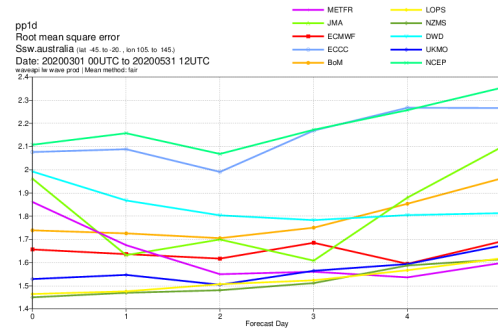
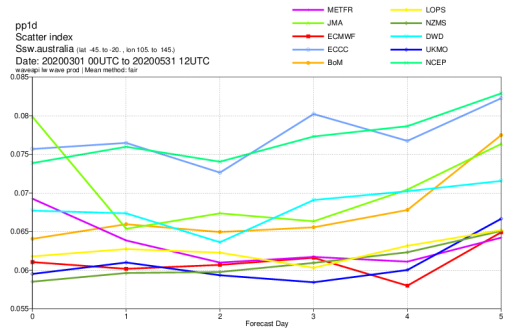
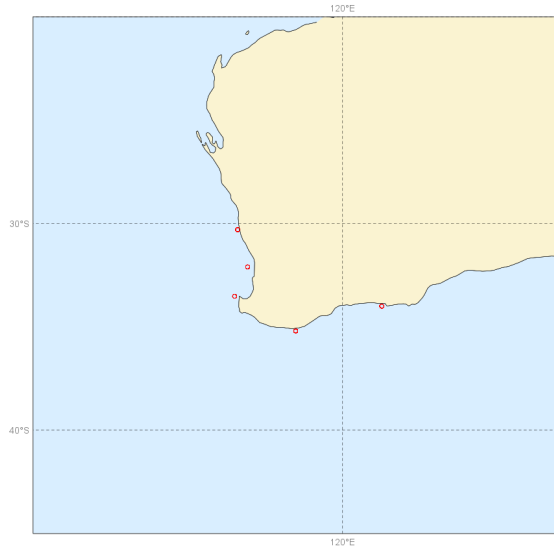
South of South America. Top panel: observation distribution. Middle left panel: Forecast scatter index (standard deviation of the difference normalised by the mean of the observations). Middle right panel: Forecast root mean square error (RMSE). Bottom panel: forecast mean error (bias).

Buoys observations - from 20200301 to 20200531 - (pp)



East Australia - New Zealand. Top panel: observation distribution. Middle left panel: Forecast scatter index (standard deviation of the difference normalised by the mean of the observations). Middle right panel: Forecast root mean square error (RMSE). Bottom panel: forecast mean error (bias).

Buoys observations - from 20200301 to 20:



South South West Australia. Top panel: observation distribution. Middle left panel: Forecast scatter index (standard deviation of the difference normalised by the mean of the observations). Middle right panel: Forecast root mean square error (RMSE). Bottom panel: forecast mean error (bias).