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Mercator Ocean
Invited Talk
(Invited Talk)
Ocean monitoring and forecasting systems highly rely on satellite and in situ observation density and accuracy to improve the model forecasts via data assimilation. Satellite observations allow constraining the surface ocean circulation as in situ temperature and salinity profile observations helps to control the ocean stratification and interior variability.
After reviewing the quality of ocean reanalysis and forecasts in the tropical Atlantic by comparison to observations, observation impact studies will be presented. Their goal is to evaluate the role of different ocean observing networks to constrain the tropical ocean circulation, when assimilated in ocean monitoring systems. Such data assimilation experiments are conducted in the context of Ocean Predict, CMEMS and different research projects. They are also required to test improvement of the data assimilation strategy.
The focus of this presentation will be mostly on the impact of Argo and mooring networks on ocean real time analysis and forecasts and multi-year reanalysis simulations, their potential evolution and the challenges related to their data assimilation. To benefit from the sparse but high frequency mooring observations when constraining the ocean dynamic in the tropics, the data assimilation system need to be specifically design. This is due to the low spatial resolution of the mooring array compared to the large spectrum of the scale of variability needed to be constrained in the Tropics in ocean model forecasts. The combination of different in situ platforms is then needed, in addition to satellite observations, to improve the ocean forecasts and analysis.
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