



Seasonal predictions at INGV-CMCC: sensitivity to the improvement in ocean initial conditions.

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The impact of improved ocean initial conditions on the hindcast skill of the INGV (Istituto Nazionale di Geofisica e Vulcanologia)-CMCC (Centro Euro-Mediterraneo per i Cambiamenti Climatici) Seasonal Prediction System (SPS), developed under the EU projects DEMETER and MERSEA, is investigated. The ocean initial conditions have been produced by means of a Reduced Order Optimal Interpolation procedure which assimilated temperature and salinity profiles globally. Sets of 9 member ensemble hindcasts have been produced for the period 1992-2001 in order to assess the impact of the oceanic initial conditions thus produced. The improved oceanic initial conditions lead to increased skill in the prediction of ENSO in our system. In addition, the forecasts of the tropical storms activity over northern Indian Ocean and Eastern North Pacific are also improved. Our results also indicate a considerable increased skill in boreal winter surface climate anomalies prediction. The present study is part of the research efforts currently going on at INGV-CMCC in the framework of the EU project ENSEMBLES.