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Sea surface temperature and short term climate predictability
CONSTANTIN ANDRONACHE, Boston College — Atmospheric processes have a relatively short memory of initial conditions of about two weeks for detailed daily weather prediction. Nevertheless, skilful seasonal forecast is possible in the presence of slow varying boundary conditions (BC) of the atmosphere, such as sea surface temperature anomalies (SSTA) over large oceanic regions. These conditions typically evolve on a much slower time scale than daily weather events and atmospheric predictability can be increased as long as the future evolution of such BC can be predicted. Given the importance of SSTA in the interaction between the ocean and atmosphere, it is of interest to investigate the nature of temporal persistence of large-scale SSTA in the global ocean. We use the global SSTA and investigate possible sources of predictability at seasonal time scale and its impact in various regions of the ocean. Data used are the NOAA Extended Reconstructed Sea Surface Temperature (SST). We show that: 1) SSTA has a persistence that depends largely on regional location in the global ocean; 2) A given SSTA distribution from a particular month, can have corresponding similar configurations in the past, largely due to the recurrence of ENSO events which affect SSTA distribution over vast regions of the global ocean.

Constantin Andronache
Boston College

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