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Modulation of Atlantic tropical cyclones by El Nino -Southern Oscillation CONSTANTIN ANDRONACHE, Boston College — North Atlantic tropical cyclones (TC) usually form in the northern hemisphere summer and fall with a maximum of activity in September. El Nino-Southern Oscillation (ENSO) has been shown to impact seasonal levels of Atlantic basin TC activity. ENSO is the strongest year to year climate fluctuation on Earth. It originates in the tropical Pacific through coupled ocean-atmosphere interactions mediated by surface wind stress and sea surface temperature (SST) variations. Understanding the effects of ENSO on the seasonal variations of TC activity has important practical consequences for seasonal forecast of hurricanes in North Atlantic. In this study we use the NOAA Extended Reconstructed Sea Surface Temperature, the TC counts in North Atlantic, and the NCEP/NCAR reanalysis data to investigate the relationship between significant ENSO events and TC activity during the hurricane season. Model calculations show that forecasted ENSO SSTA can be used as predictors of TC in North Atlantic region. Such results are illustrated in the context of current efforts to understand climate predictability relevant to North Atlantic tropical storms.

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