

Dynamically-Based Seasonal forecasts of Atlantic Tropical-storm Activity

Matt HUDDLESTON
Met Office, Exeter, UK

Most seasonal forecasts of Atlantic tropical storm activity are produced using statistical-empirical models. As highlighted in the media, these forecasts failed in 2006, and a number of financial & insurance companies who took action based on these forecasts lost billions of dollars.

However, climate forecasts can also be made using dynamical numerical models. Based on 12 years of re-forecasts and 2 years of real-time forecasts, we show that the so-called EUROSIP (EUROpean Seasonal to Inter-annual Prediction) multi-model ensemble of coupled ocean atmosphere models has substantial skill in probabilistic prediction of the number of Atlantic tropical storms, and real-time forecasts correctly distinguished between the exceptional year of 2005 and the below-average hurricane year of 2006. A key reason for the latter can be attributed to a skilful prediction of a developing El Nino event in the Pacific Ocean. These results have implications for the reliability of climate change predictions of tropical cyclone activity using dynamically-based coupled ocean-atmosphere models.