P38 The impact of SST on the wind and air temperature simulations: a case study for the coastal region of the Rio de Janeiro state.

Dragauda, Ian Cunha D. Viana, Mauricio Soares da Silvaa, *Alberto Luiz Coimbra Institute of Post-Graduation and Research in Engineering (COPPE), Federal University of Rio de Janeiro (UFRJ), Brazil,* Luiz Paulo F. Assadb, *Department of Meteorology, Geoscience Institute (IGEO), and UFRJ,* Márcio Cataldic, *Department of Agriculture and Environmental Engineering, Post-Graduation in Biosystems Engineering, Fluminense Federal University, Brazil,* Luiz Landaua, Renato N. Eliasa, *COPPE/UFRJ,* Luiz Claudio G. Pimentelb, *IGEO/UFRJ,* and Jimy Dudhia, *Mesoscale and Microscale Meteorology Laboratory, National Center for Atmospheric Research*

The impact of Sea Surface Temperature (SST) on the wind and air temperature numerical simulations over the coastal region of the state of Rio de Janeiro, Brazil, was investigated using the Weather Research and Forecasting (WRF) model. The study period comprised January 24 to 26, 2014, characterized by the occurrence of coastal upwelling. Two numerical experiments were performed. The first used the Global Forecast System (GFS) forecast results to prescribe the initial and boundary conditions, and in the second, the SST was replaced by the Multi-scale Ultra-high Resolution SST (MUR SST). The experiments showed significant differences between the SST fields, being higher than 10 °C. The upwelling was better represented with the MUR SST, which generated improvements in the near surface air temperature. In the offshore region, over areas with higher SST, the wind speed at 10 m AGL was stronger, and opposite behavior was observed over low SST areas. In addition, in regions with higher SST differences between the experiments, differences of wind direction at 10 m AGL higher than 90° was detected. Even with significant SST differences between experiments, the land-sea breeze simulation was underestimated in relation to the synoptic forcing (South Atlantic Subtropical Anticyclone).