



Atlantic tropical cyclones close to Spain during 2005 and 2006 hurricane seasons: prediction, considerations and lessons to learn

F. Martín, I. San Ambrosio and J. M. Fernández

Instituto Nacional de Meteorología,

Servicio de Técnicas de Análisis y Predicción, Spain

Forecasting and Analysis Techniques Department

(francisco.martin@inm.es)

During the 2005 and 2006 North Atlantic hurricane seasons three tropical cyclones (Vince and Delta, 2005, and Gordon, 2006) affected the Iberian Peninsula and Canary Islands. Two of them reached the hurricane category (Vince and Gordon) according to the National Hurricane Center (NHC) in Miami and the third one was just a tropical cyclone (Delta). All of them were late-season tropical storms. In their displacements towards higher latitudes these tropical cyclones experienced an extra-tropical transition, ET, affecting some Spanish territories with winds of storm to hurricane forces. Two of them (Delta and Gordon) suffered a further re-intensification process. These three tropical disturbances represented a challenge for the Spanish forecasters at the National Meteorology Institute (INM) since the monitoring of tropical systems moving towards our latitudes is not a common activity. This work analyses the procedures that were used for their prediction. The studies and analyses made and the lessons learnt for facing future developments or occurrences of tropical cyclones and other structures in transition phase are shown. In addition, some operational actions and activities are considered to mitigate their potential effects and impacts on the Spanish population and properties.