

A Study of Westward Recurving Tropical Cyclone Tracks in the Atlantic

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Hurricanes pose a threat to property and human life. Hurricane Sandy (2012) was unusual in that it recurved to the west as it traveled north, rather than recurving to the east, resulting in over \$62 billion worth of damage. Although these westward recurving storms account for <10% of all the western Atlantic storms, they occur more often than scientists originally believed and have the potential to cause more damage than eastward recurving storms. The purpose of this study was to analyze the tracks of cyclones that recurve in the westward direction, and also those that recurved to the east, to determine if there were any features which might help predict the direction of recurvature. Tropical cyclone data for 15 westward and 15 eastward storm tracks were obtained from Weather Underground and weather composites were created for surface pressure and vector winds using data from the National Centers of Environmental Predictions and the National Center for Atmospheric Research (6-hourly NCEP-NCAR reanalysis data). Results indicated that westward recurving tracks have high pressure systems to the northeast of the cyclone and northwest wind direction at the location of the cyclone. Eastward recurving tracks generally experienced no high pressure systems around the cyclone and east/northeast wind direction at the cyclone location. These results have the potential to improve cyclone forecasting.

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