

Comparison of GPS Dropsondes between Developing and Non-developing Disturbances in the Atlantic Diamilet Pérez¹, Shuyi S. Chen²

A comparative study of Global Positioning System (GPS) dropsonde data of the environment surrounding tropical disturbances in the Atlantic is presented. The lack of research performed using this approach led to the investigation of the dropsonde archives to obtain vertical profiles of moisture content, air temperature and wind speed and Fay from 2008 at their pre-depression stages, while the selected non-developing cases are Wave #4 and Wave #4 and Wave #6 from the selected | soundings show no significant and general difference between the cases, although the results somewhat support the known favorable characteristics for development. This study serves as a starting point for further research that may improve the forecast of cyclogenesis.

conditions include:

- thunderstorm activity.
- convection nor disperses heat and moisture.
- or unstable atmosphere.

patterns that favor or inhibit development.

A. Data

B. Case Study



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Figure 10 shows a strong wind shear pattern from east to west but Figure 11

Conclusions

• No significant differences in the environmental conditions surrounding

• Slight variations might be caused by geographical location differences.

• The results are consistent with the accepted favorable conditions for development, yet do not prove that these conditions are exclusive of

• The representativeness of the available data remains uncertain.

Recommendations

Future work should include looking at additional meteorological variables, such as vorticity, Saharan Air Layer (SAL) influence and sea surface temperature, as well as comparing cases with similar geographical locations in the Atlantic and studying the characteristics of the convection

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