

## **The Use of GPS Radio Occultation Data for Tropical Cyclones prediction**

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The tropical cyclone is one of the most important weather systems that routinely cause significant loss of lives and property. However, accurate prediction of tropical cyclones track, intensity, and its associated winds and precipitation remain a great challenge. Because of this, the U.S. NOAA has established a Hurricane Forecast Improvement Project with a goal to significantly improve the hurricane forecast skills. To achieve this goal, continued improvement of numerical model and data assimilation systems is required. In addition, improvement of observations over the tropical oceans, which are lack of traditional meteorological observations, is necessary. The GPS radio occultation (RO) data from a constellation satellite system, such as FORMOSAT-3/COSMIC, provide a unique opportunity to substantially increase the observations over the tropical ocean, and improve the analysis and prediction of tropical cyclones. In this presentation, we will review the current status of operational tropical cyclone forecast. We will present recent results on the assimilation of GPS RO data and their impact on tropical cyclone prediction. Suggestions for future direction of tropical cyclone research will be discussed.