



## **An examination of the Saharan Air Layer on the tropical cyclone environment using COSMIC, CALIPSO, and geostationary satellites**

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The Saharan Air Layer (SAL) potentially influences tropical cyclone genesis, development, and structure. New technologies are emerging which allows a collective analysis of the SAL impact. Recently (April 14, 2006), a new constellation of satellites was successfully launched called the Constellation Observing System for Meteorology, Ionosphere, and Climate (COSMIC), which

provide temperature, moisture, and refractivity profiles (Anthes, Ricken, and Kuo 2000; Cucurull et al. 2006) using radio occultation.

Because radio signals can pass through thick cloud cover and precipitation, weather conditions will not interfere with data gathering, as often occurs with remote sensing platforms. Therefore, this technology could be very useful to the monitoring of tropical cyclones. This study will investigate COSMIC's capabilities in studying the tropical cyclone environment, with a focus on SAL events. This validation will include a comparison against CALIPSO aerosol data, and the geostationary satellite "SAL detection" algorithm (12 micrometers minus 10.8 micrometer). Our first attempts at developing a SAL climatology based on years of geostationary satellites will also be discussed.