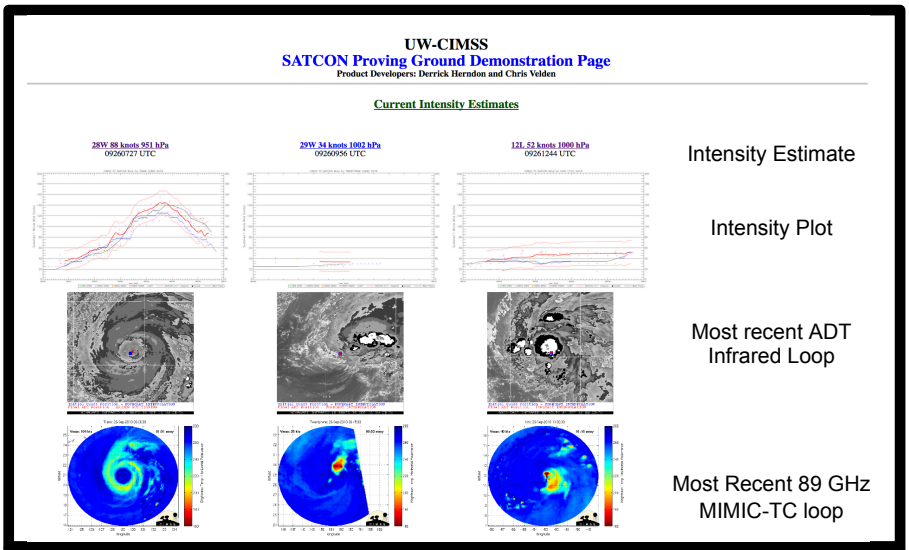
SATCON

Quick Guide

Why is SATCON Important?

The SATellite CONsensus (SATCON) combines multiple estimates of tropical cyclone (TC) intensity from objective intensity algorithms into a single weighted estimate. The weighted estimate is more skillful than the individual members thus improving the current estimates of intensity. This tool can alert forecasters to rapid changes in TC intensity that may not be captured by traditional methods such as the Dvorak Technique. Geostationary infrared, passive microwave sounder and imager channel information are optimally blended. This can replace the need to view multiple algorithms.



SATCON maximum sustained winds for Hurricane Florence 2018

How is SATCON Created?

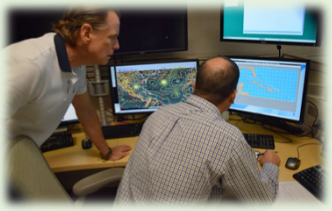
Current members of the consensus include the CIMSS Advanced Dvorak Technique (ADT), CIMSS AMSU/SSMIS/ATMS and CIRA ATMS microwave sounder estimates. Each estimate is weighted based on situational performance for that algorithm. Estimates of both maximum sustained winds (MSW) and minimum sea level pressure (MSLP) with unique weighting for each are produced

A pressure-wind estimate of MSW using the SATCON MSLP is added to the MSW consensus to account for storm size, TC translation speed and convective organization.

Impact on Operations

Primary Application

Analysis: Decrease the amount of time spent on the TC intensity analysis by consolidating intensity information.



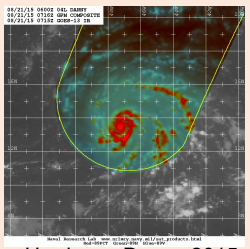
More time can be focused on the TC forecast process improving work flow efficiency.

Forecast tools: Improved inputs to statistical TC forecast models such as SHIPS

Historical data: Post-analysis of historical storms (1998- present) and best tracking.

Limitations

Latency: Estimates are limited by polar orbiter data latency. Information can be extrapolated forward up to three hours.



Hurricane Danny 2015

Individual algorithm bias: Though weights make use of the known member error characteristics larger errors may occur for storms such as TCs with extremely small eyes. Largest errors tend to be related to very small TCs (midgets) with small pinhole eyes. Eye size inputs are obtained from the ADT and ARCHER however some TC eyes may be unresolvable by available sensors.

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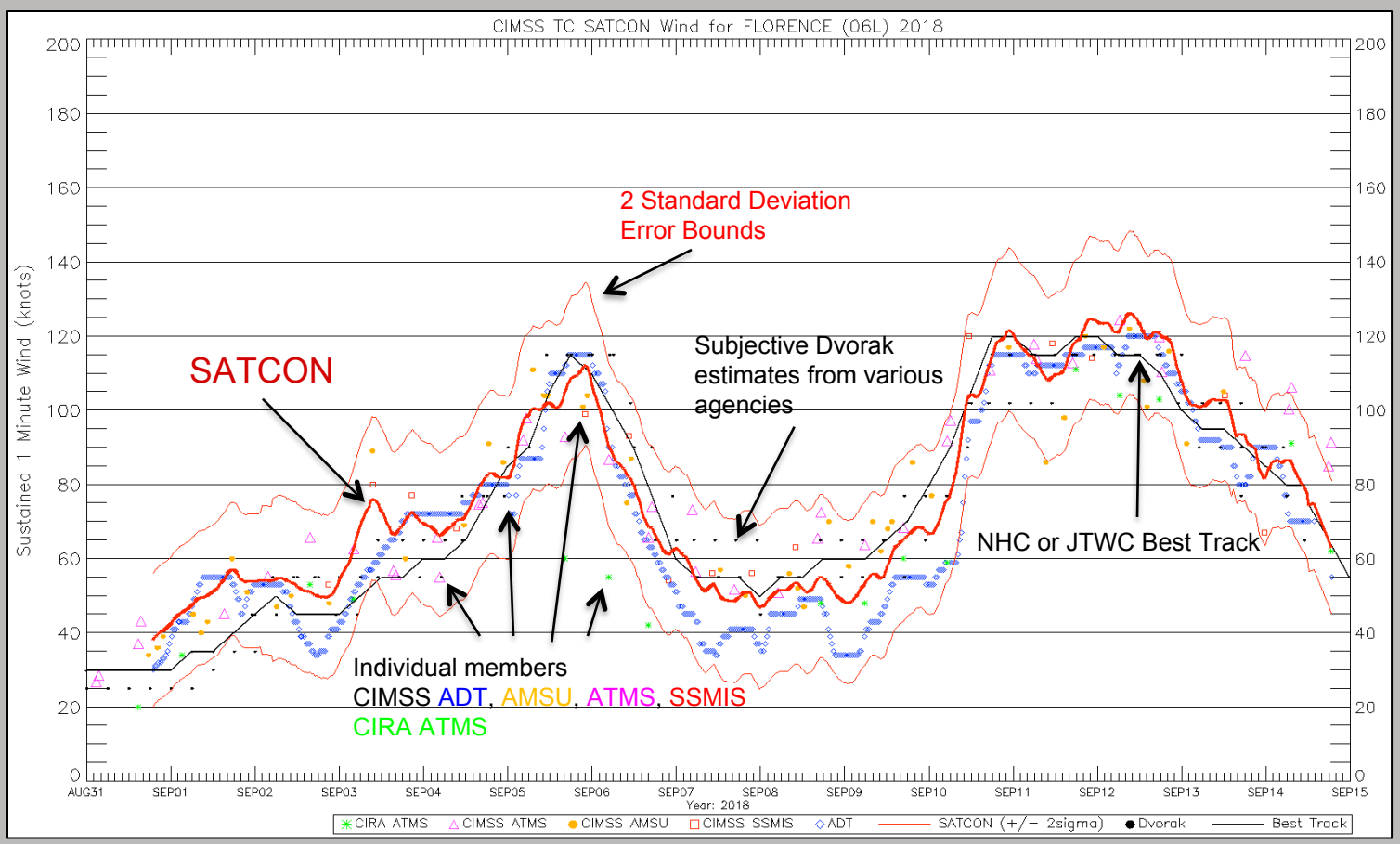
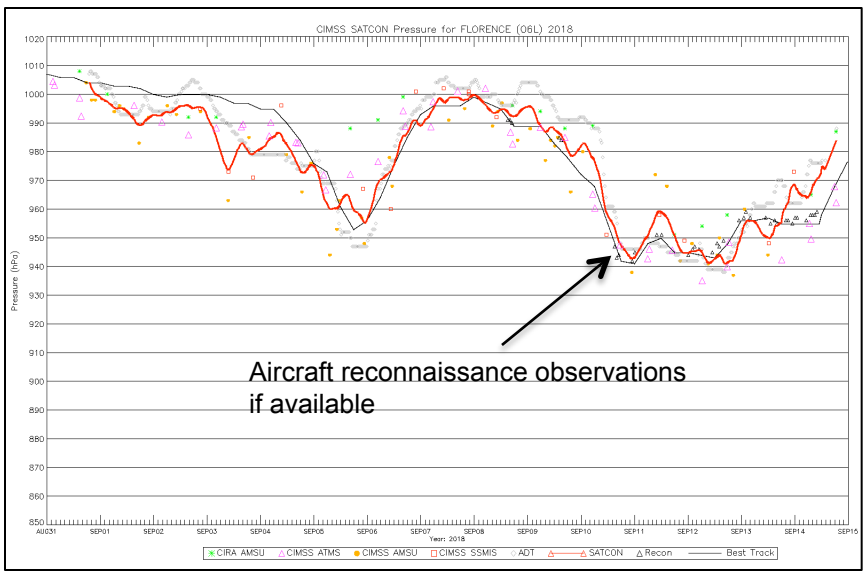


SATCON Maximum Sustained Winds for Hurricane Florence 2018.



SATCON Minimum Sea Level Pressure for Hurricane Florence 2018.

Resources

SATCON Main Page

http://tropic.ssec.wisc.edu/real-time/satcon/

Proving Ground Page with Satellite Imagery

http://tropic.ssec.wisc.edu/real-time/satcon/PG/satcon_pg.html