



OSCAT @ NOAA: Update

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Motivation

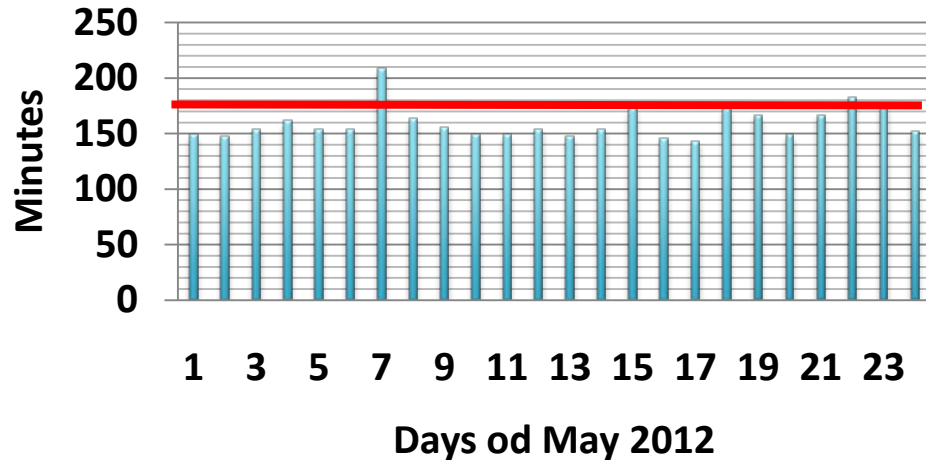
OSCAT is a Ku-band rotating pencil beam scatterometer with similarities to QuikSCAT

OSCAT has the potential to largely mitigate the negative impacts to operational weather forecasting and warning capabilities due to the loss of QuikSCAT



OSCAT Data Availability @ NOAA

- NOAA has been receiving delayed (~24 hours) OSCAT data via ISRO FTP server since September 2010
- Timely OSCAT data flow from ISRO to EUMETSAT commenced in February 2011.
 - Since then EUMETSAT has been receiving approximately 10-14 orbits per day in a timely fashion
 - In March 2011 timely OSCAT data flow began at NOAA via EUMETSAT dedicated FTP server
 - Since December 21st ISRO implemented final changes in their OSCAT NRT processor
- NOAA is currently receiving all three levels of OSCAT data: L1B, L2A and L2B
 - L2A and L2B (gridded @ 50 km WVC)

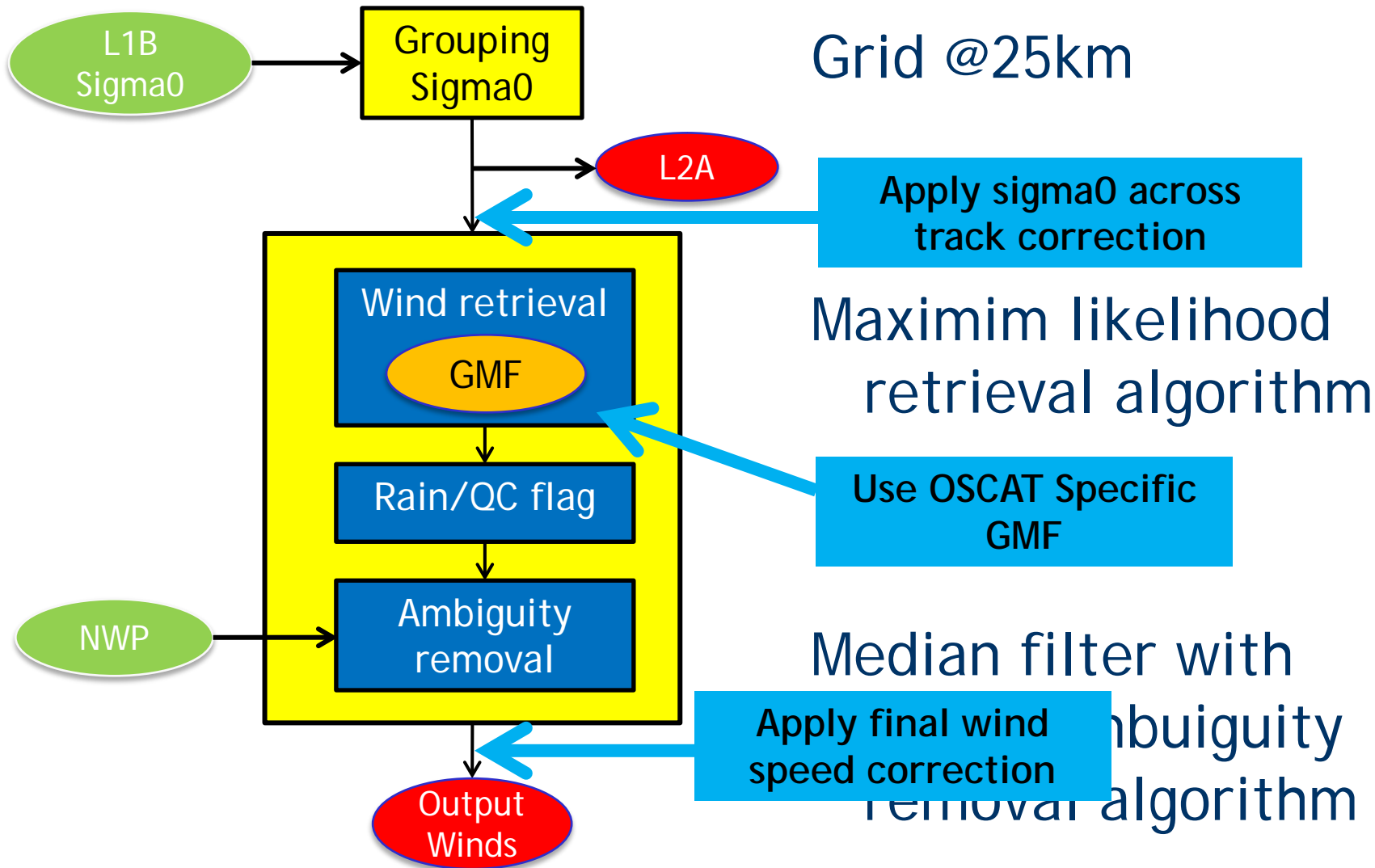


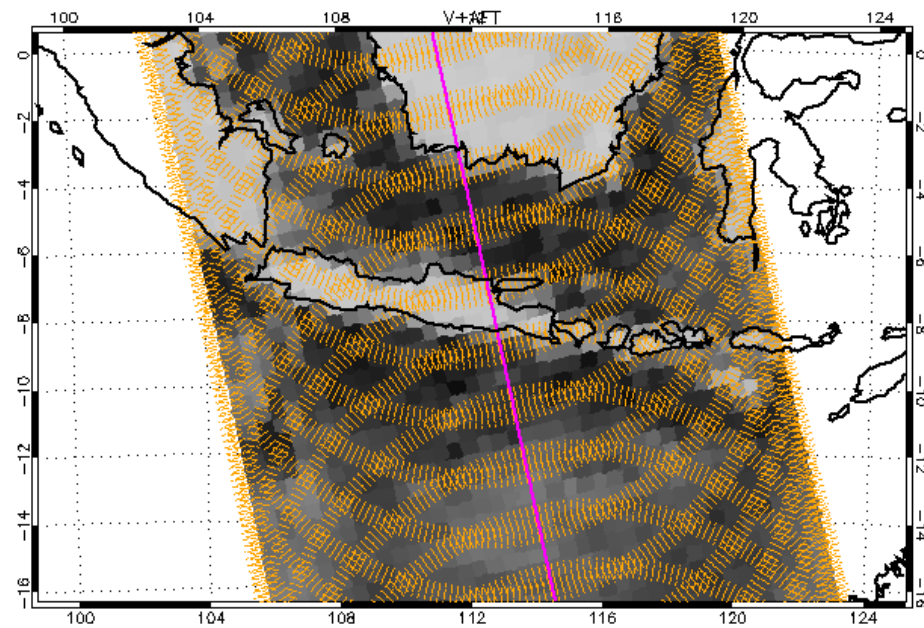
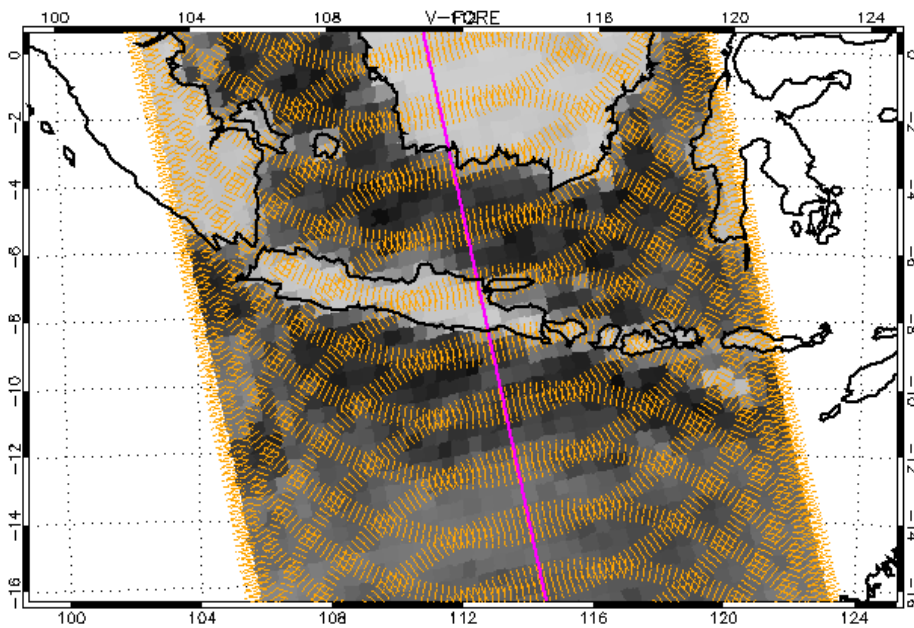
Total expected orbits : 345
Total received orbits : 340 → 98.55%
Total timely orbits (180 min): 316 → 91.59%



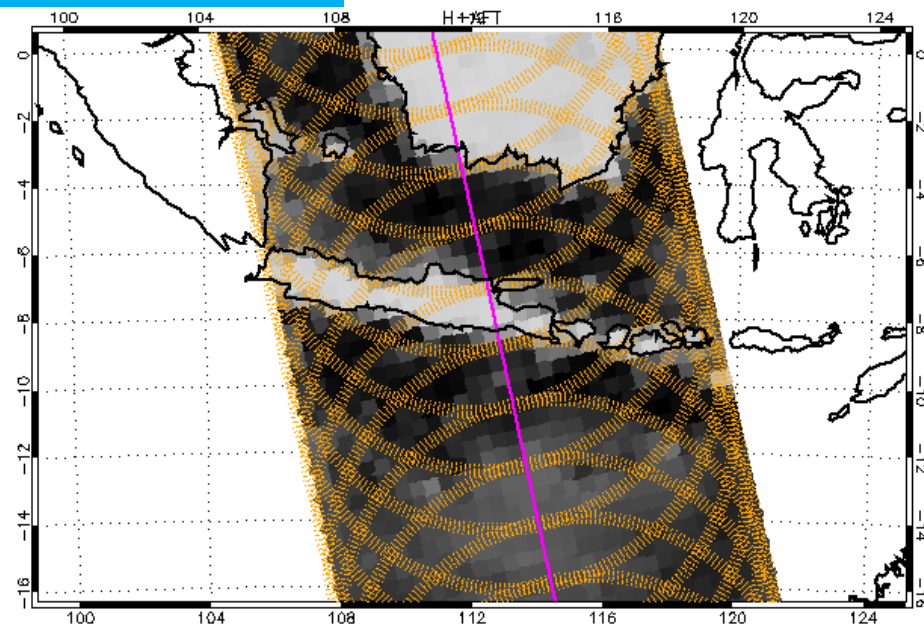
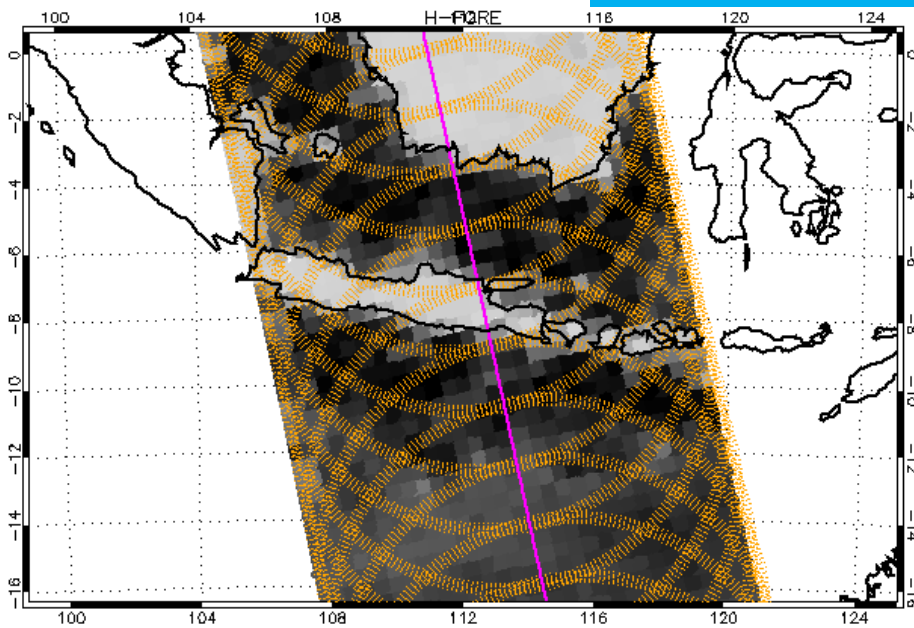
NOAA OSCAT Wind Processor

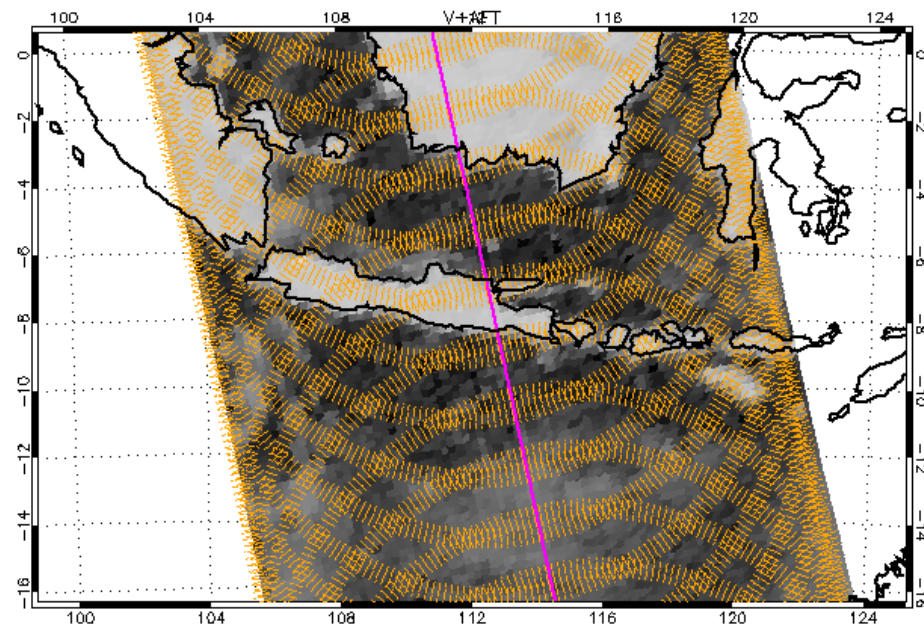
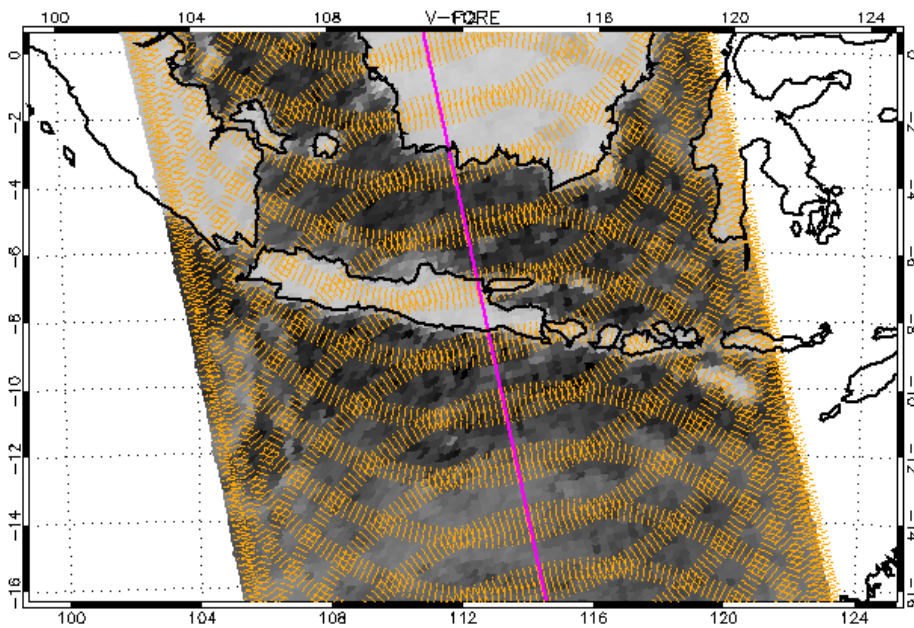
The Overview



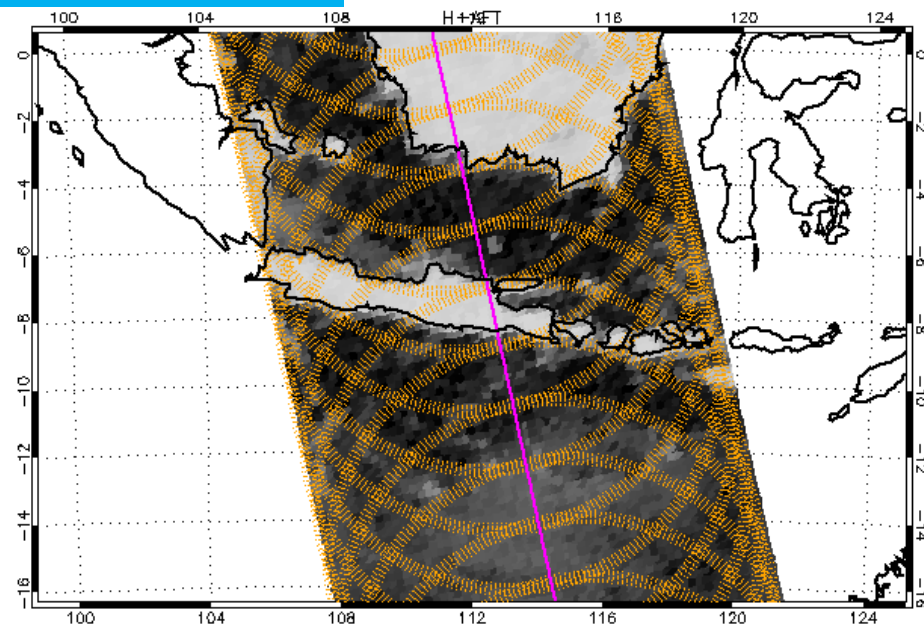
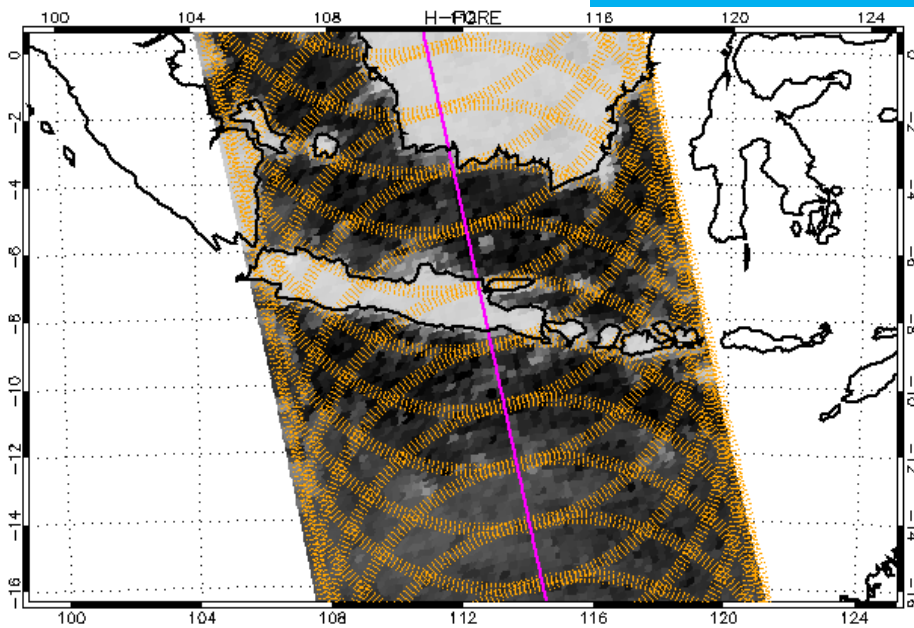


50 km grid





25 km grid





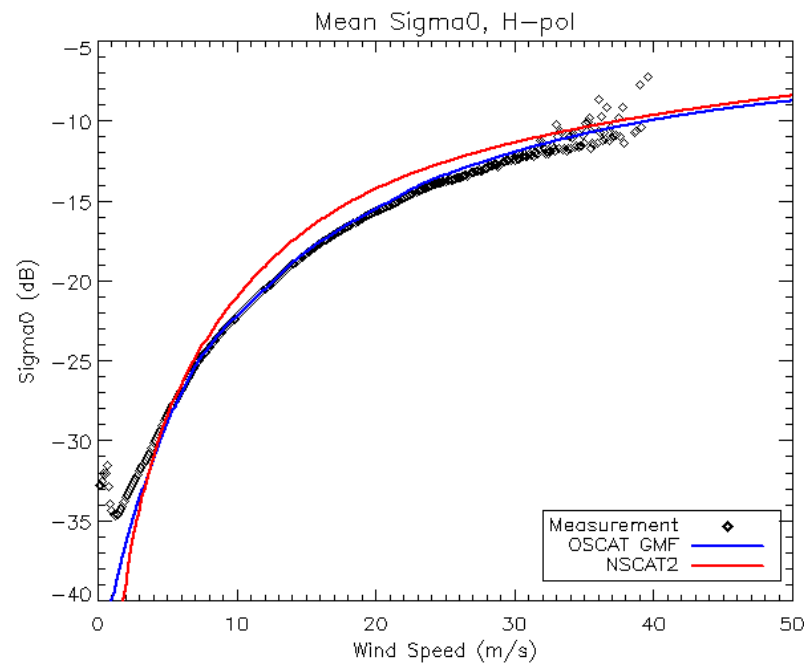
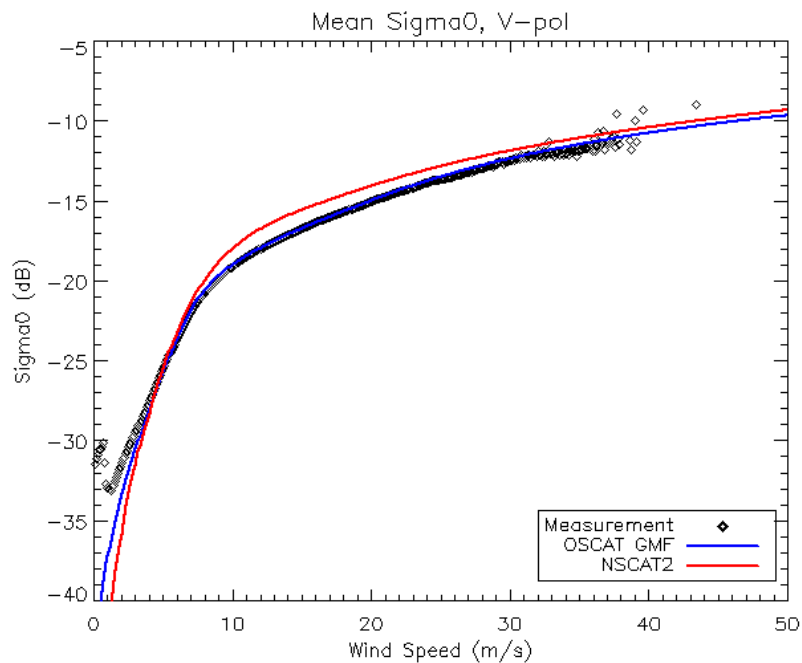
OSCAT GMF



OSCAT GMF

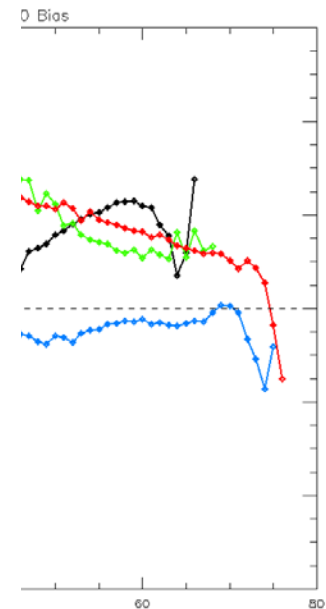
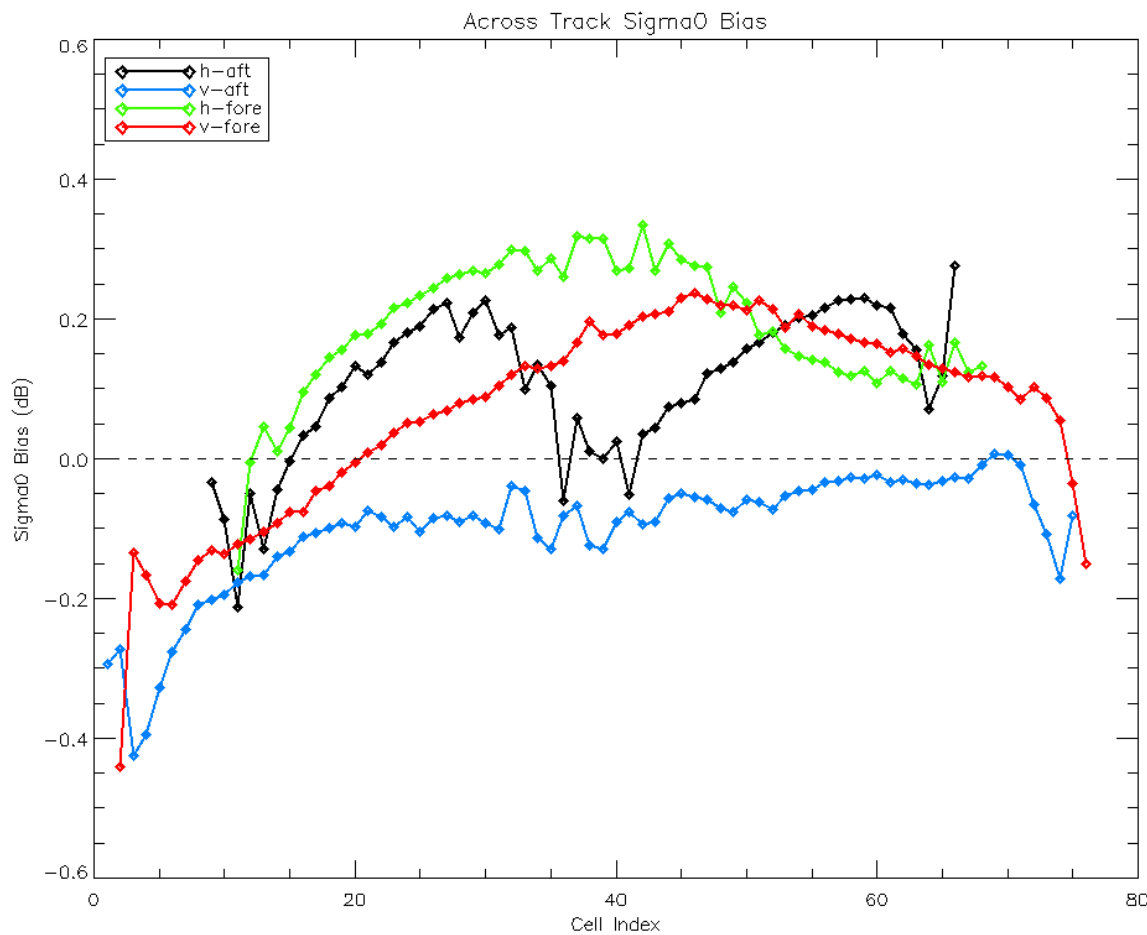
V-pol

H-pol



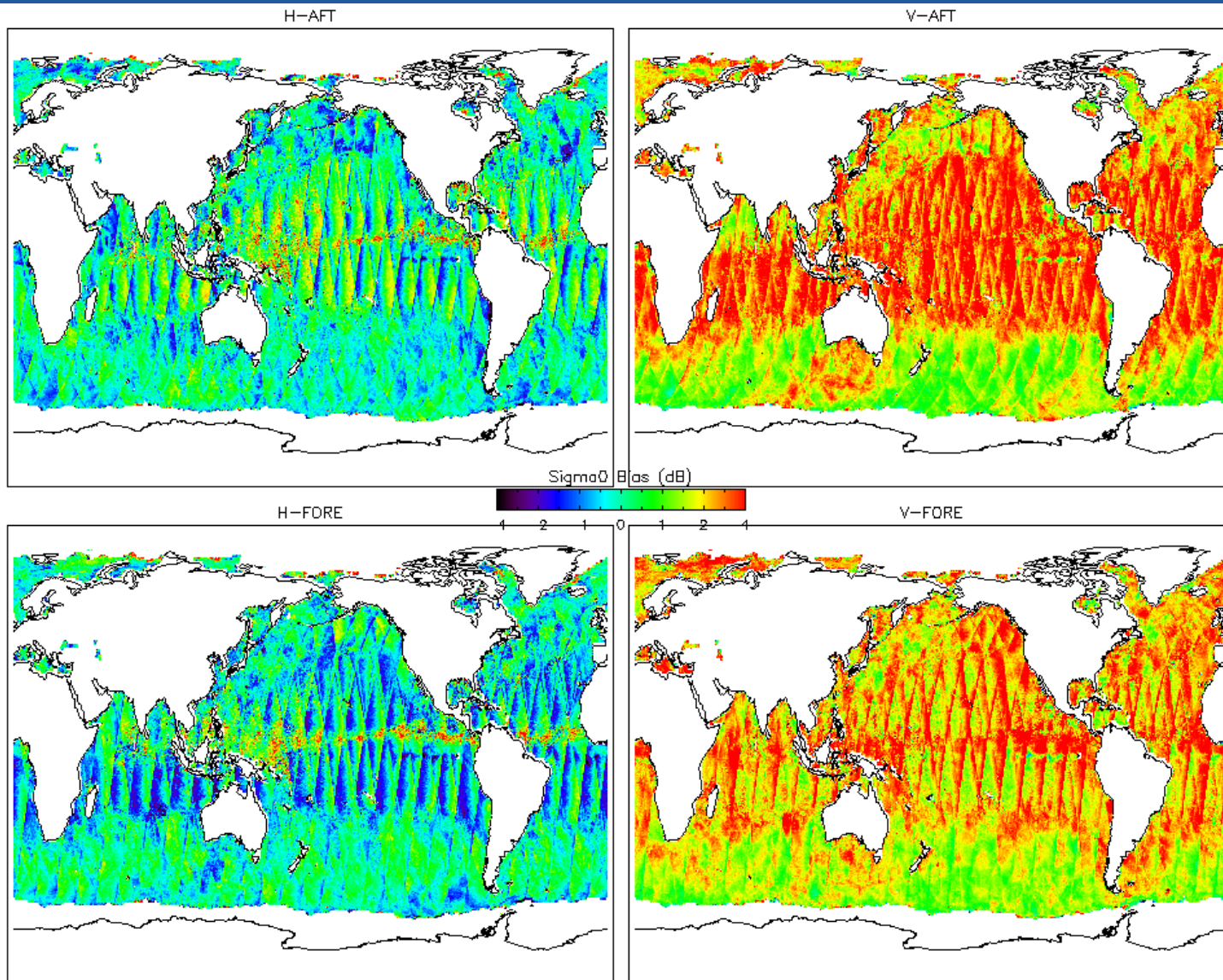


Across Track Sigma0 Bias



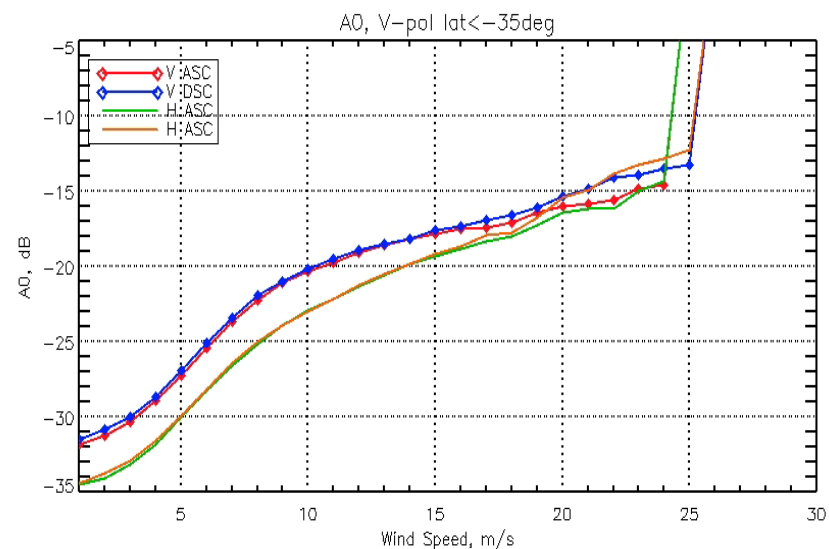
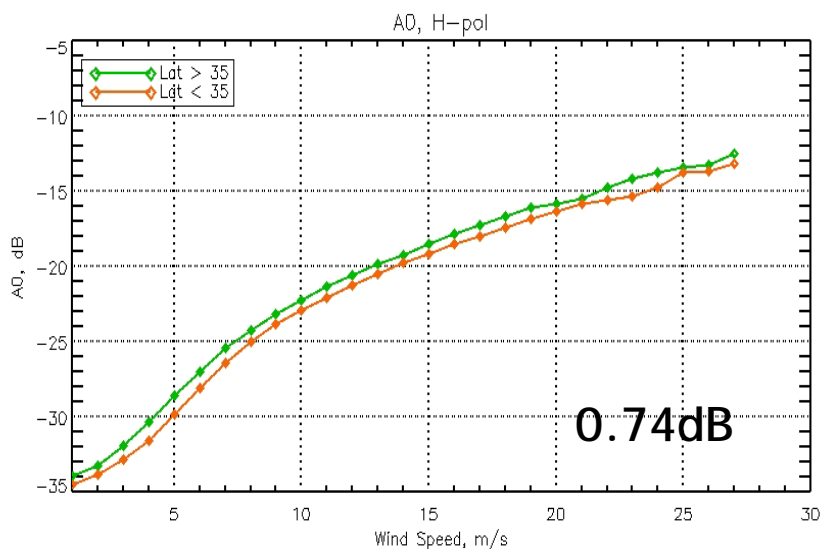
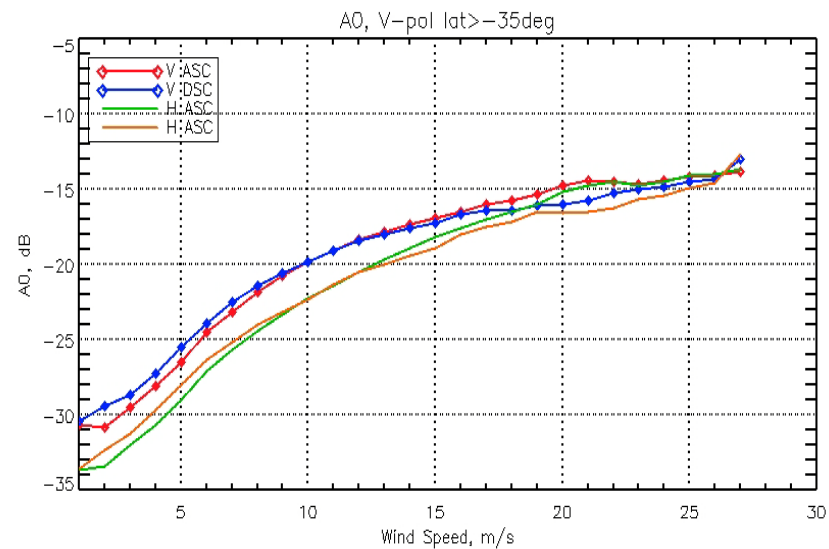
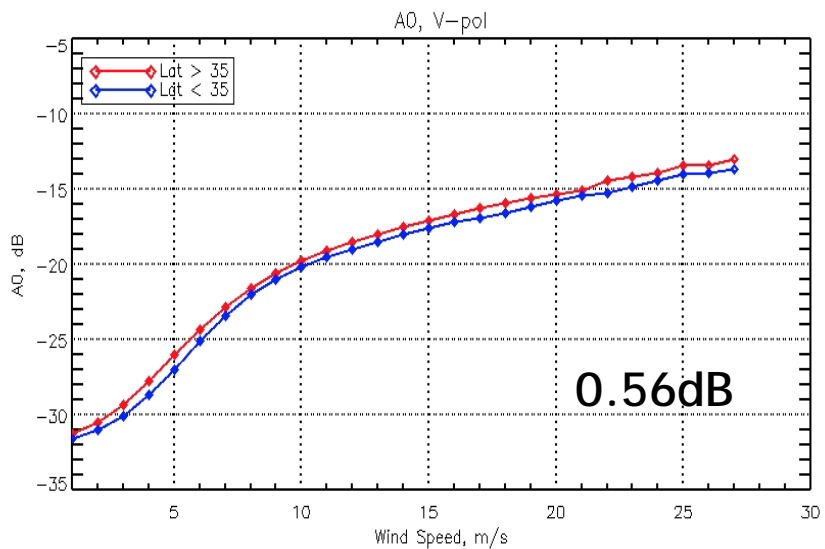


Sigma0 Bias Map



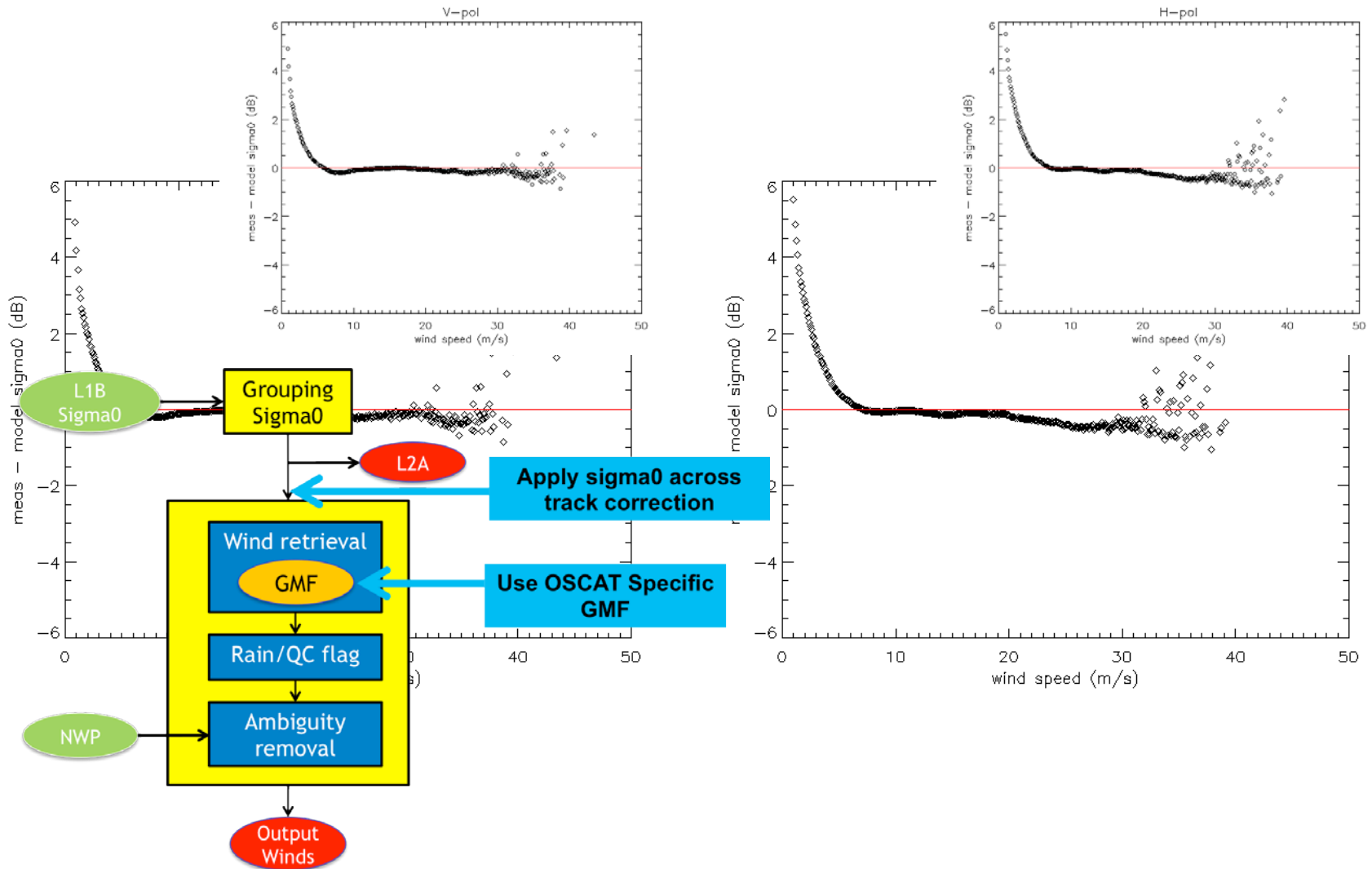


OSCAT GMF



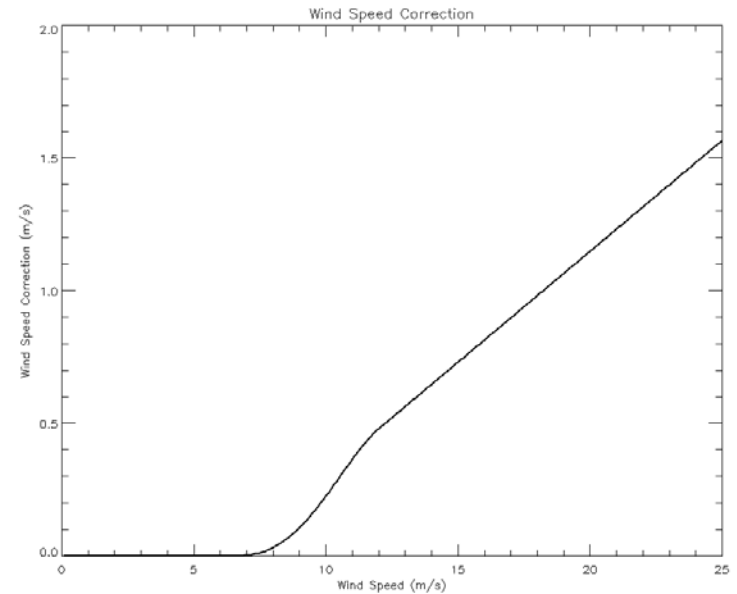
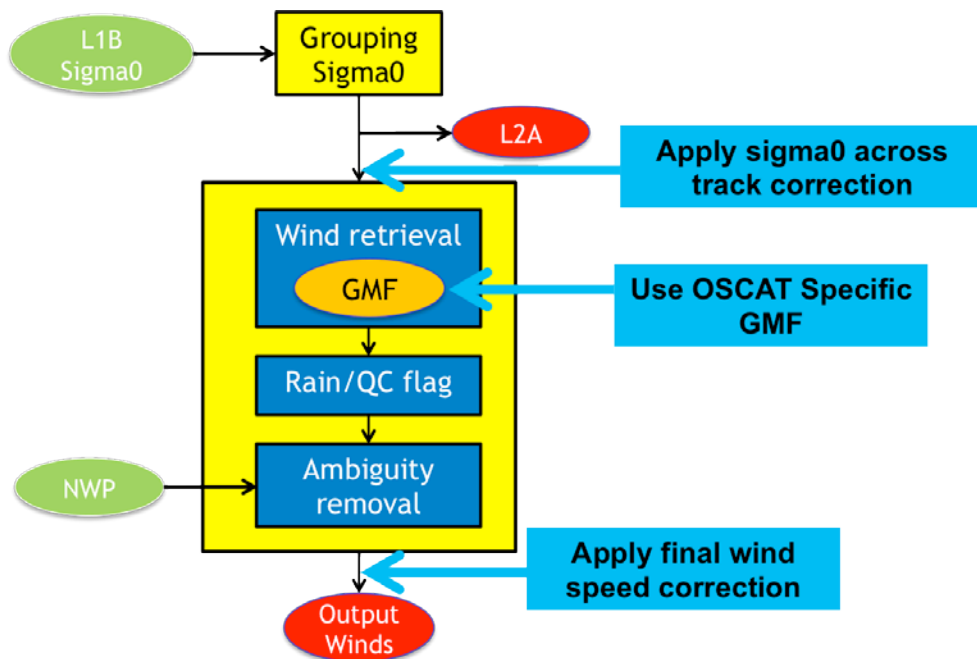


OSCAT GMF bias





Wind Speed Correction

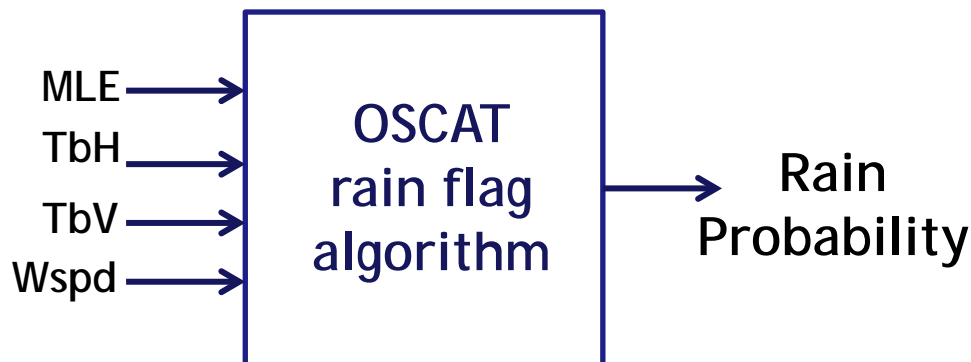




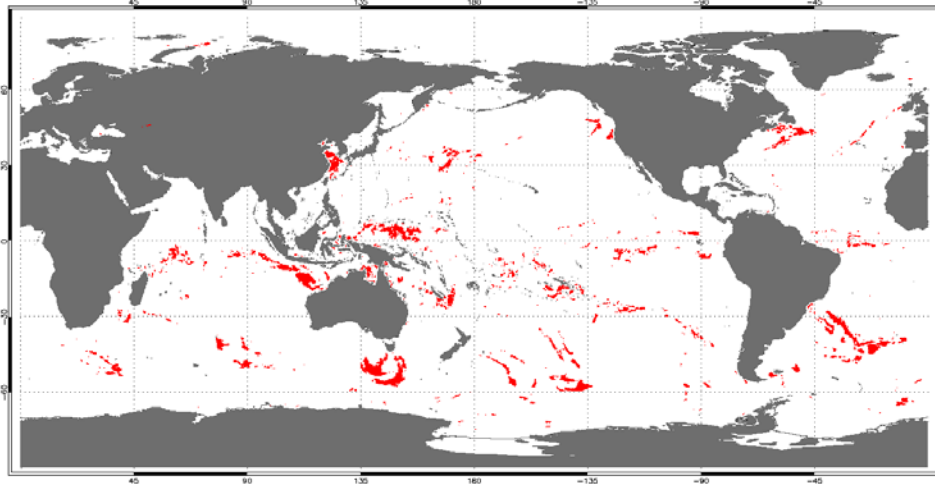
Rain Flagging



Preliminary NOAA OSCAT Rain Flag Algorithm

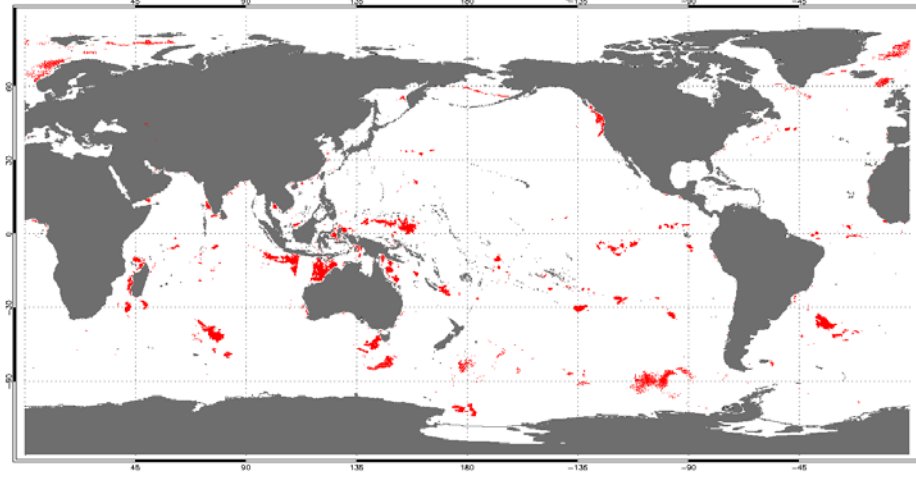


SSMI Rain Rate > 2 mm/hr



03/15/2012 RSS SSMI Daily Rain Map

OSCAT Rain Flag



03/15/2012 Flagging ~ 1.5% (under flagging)



OSCAT Data Quality Control Flag

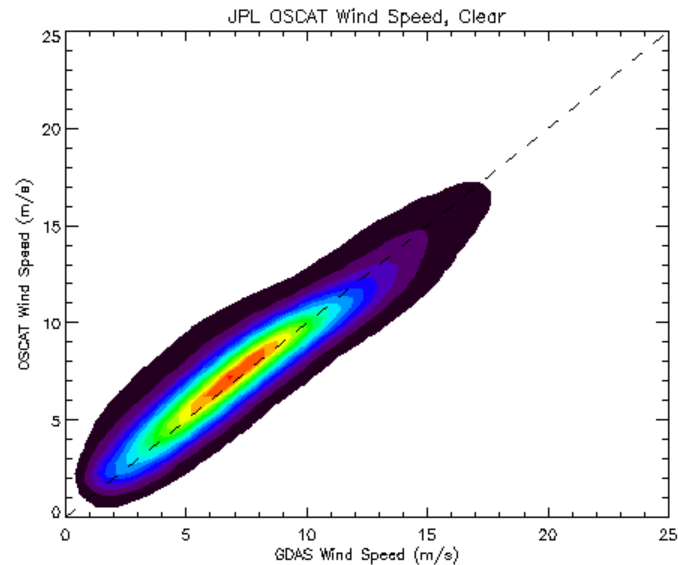
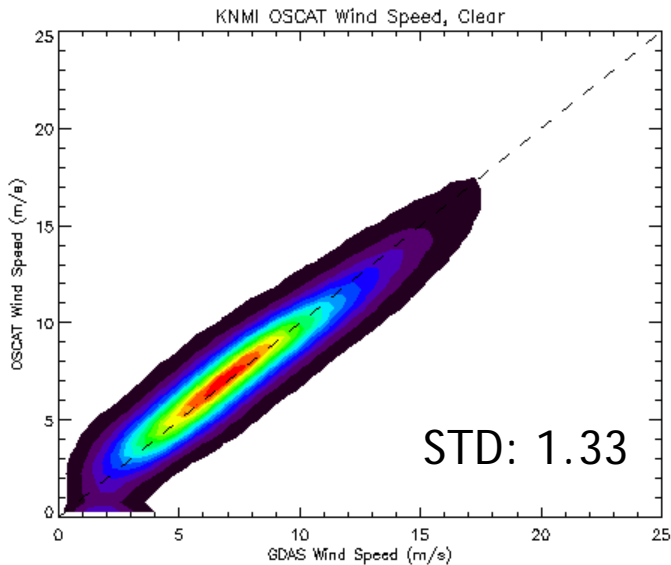
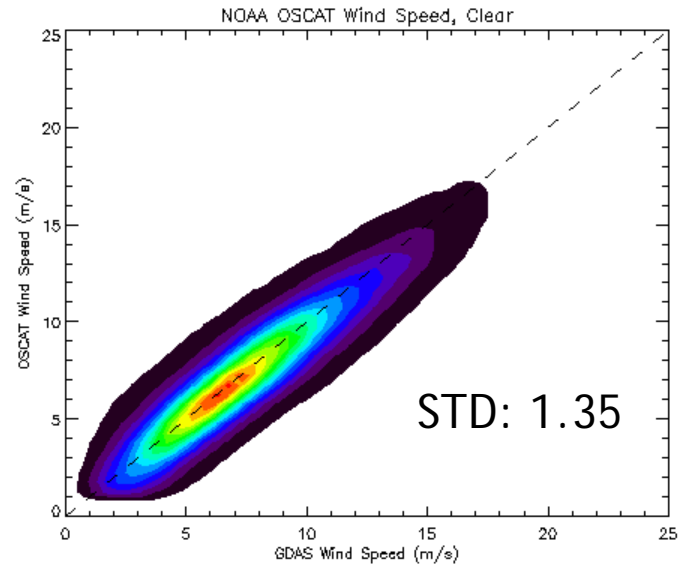
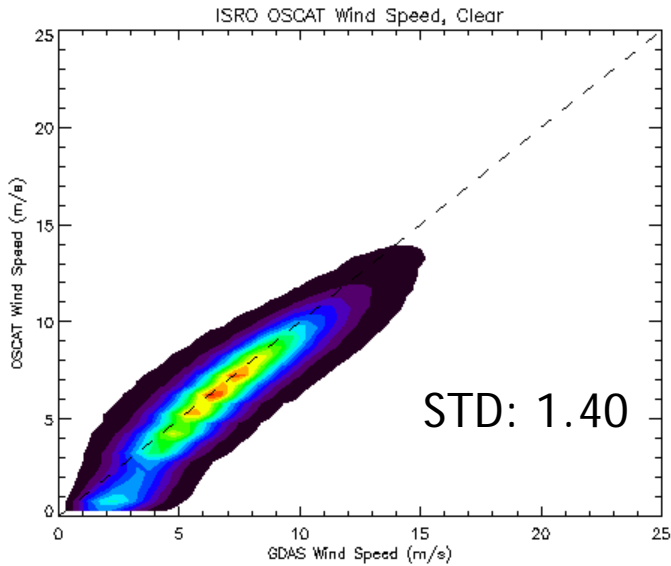
	% of quality control flag data		
	NOAA (25km)	KNMI (50km)	ISRO (50km)
wind speed			
3 - 6 m/s	2.6%	4.9%	8.8%
6 - 10 m/s	1.8%	4.9%	18.7%
10 - 15 m/s	2.3%	5.2%	52.6%
> 15 m/s	10.3%	7.1%	80.0%



NOAA OSCAT Wind Product Performance

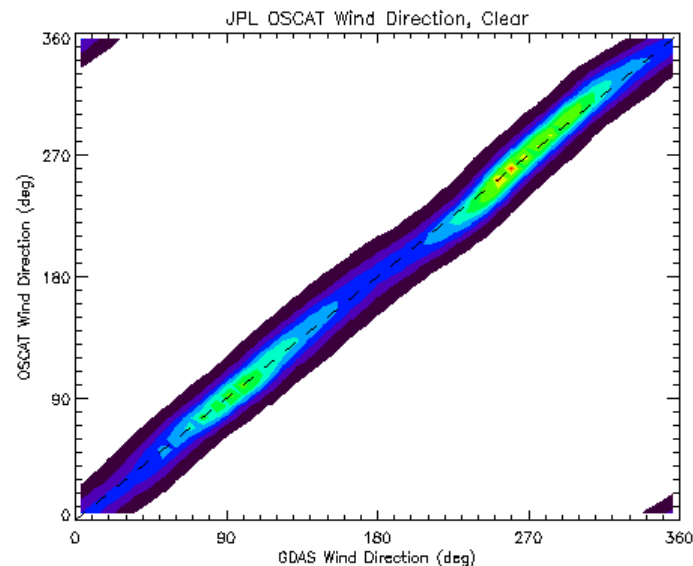
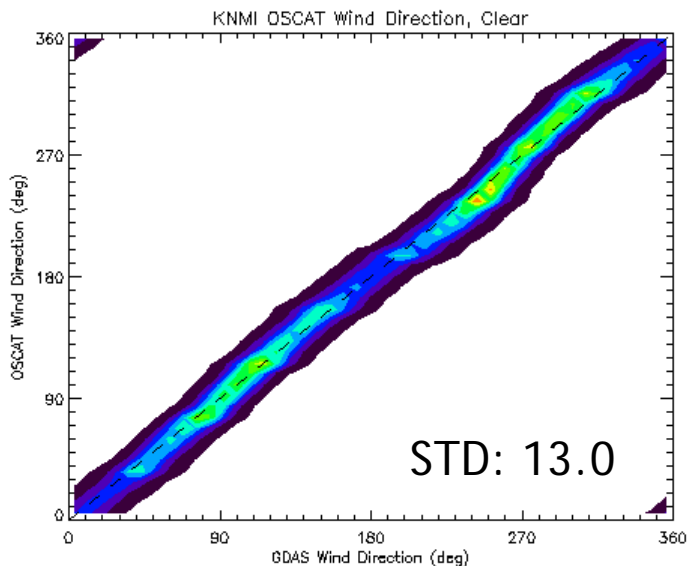
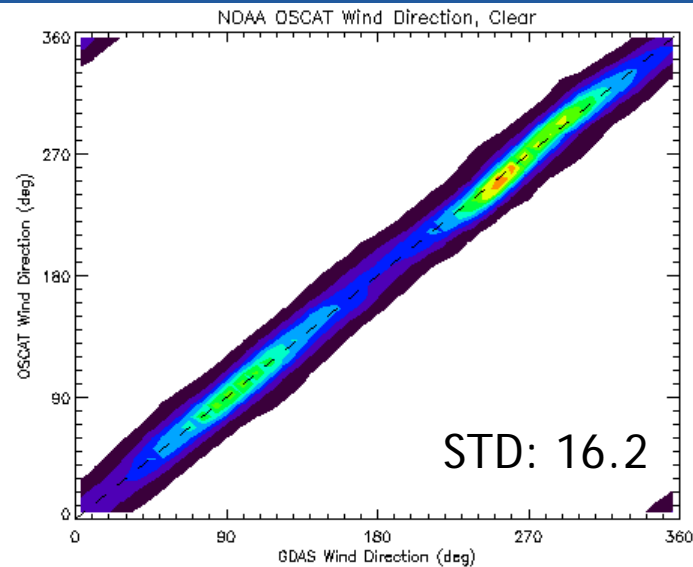
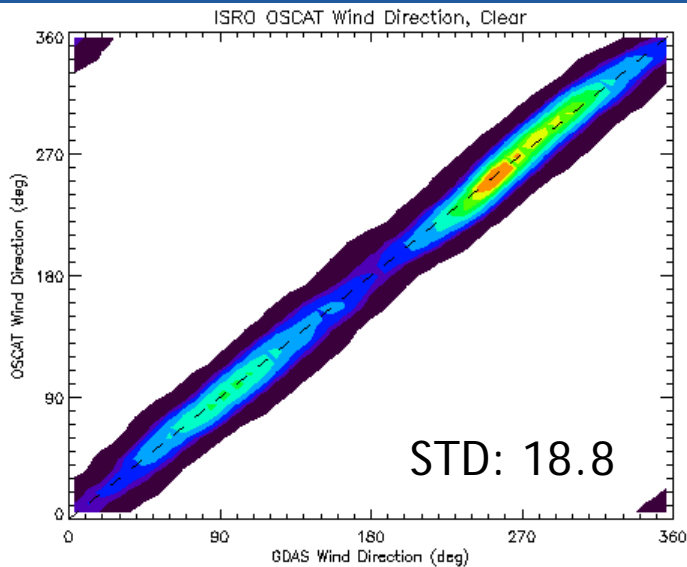


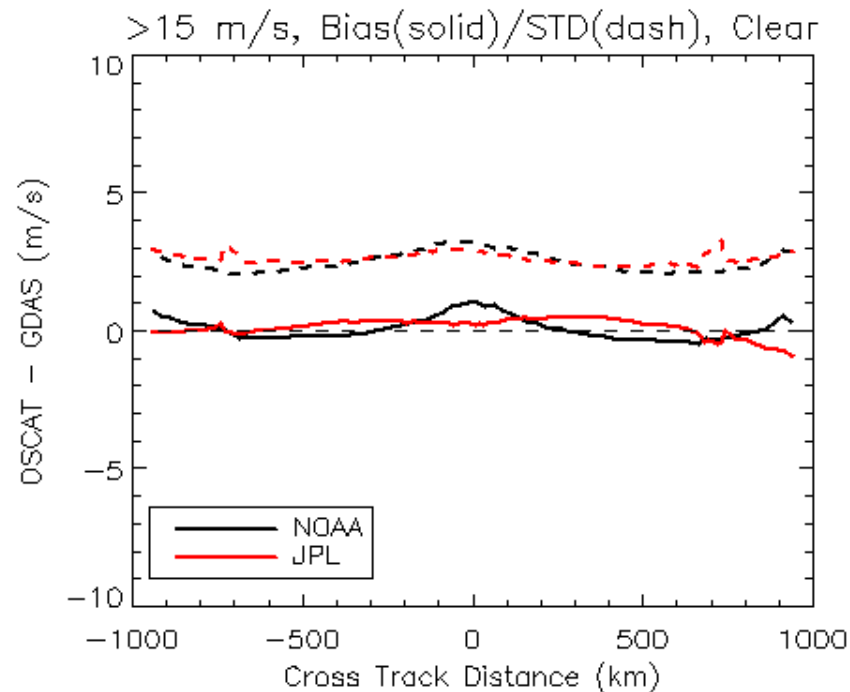
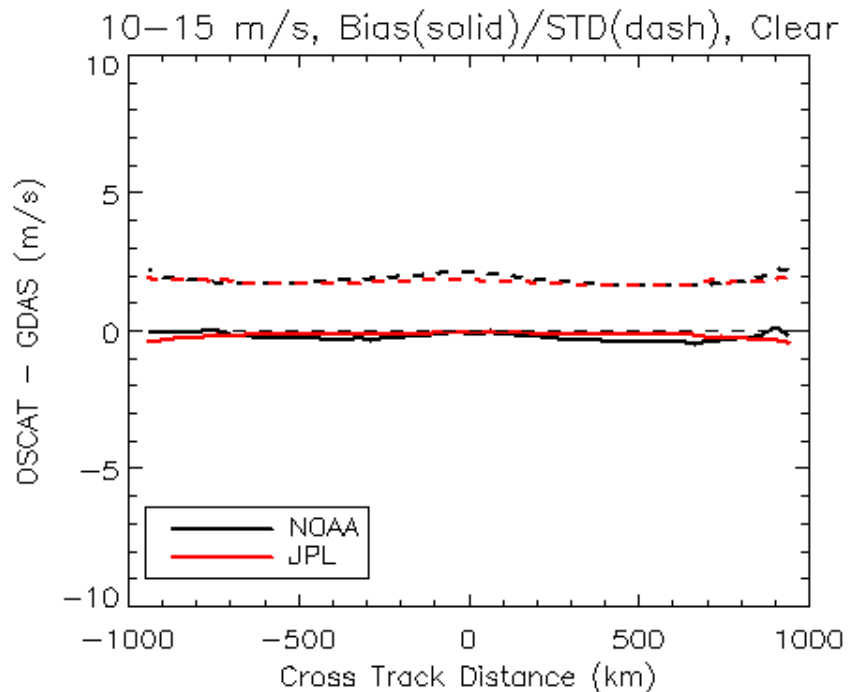
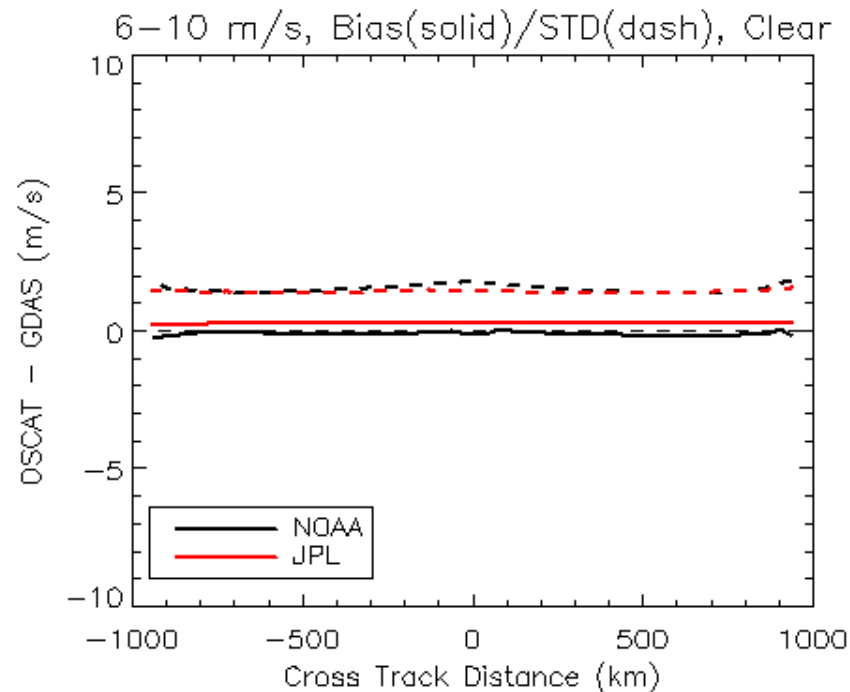
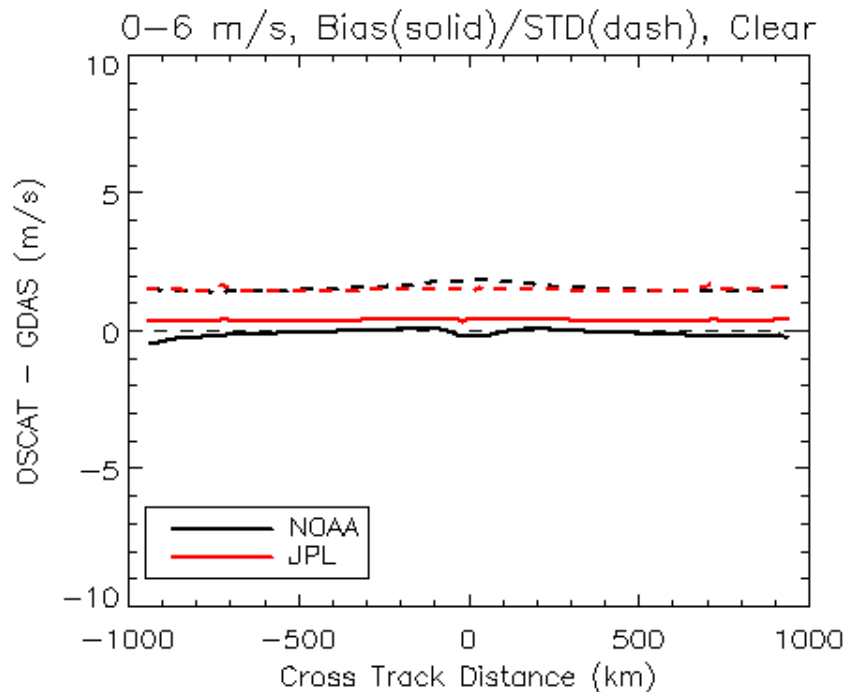
Wind Speed Comparison

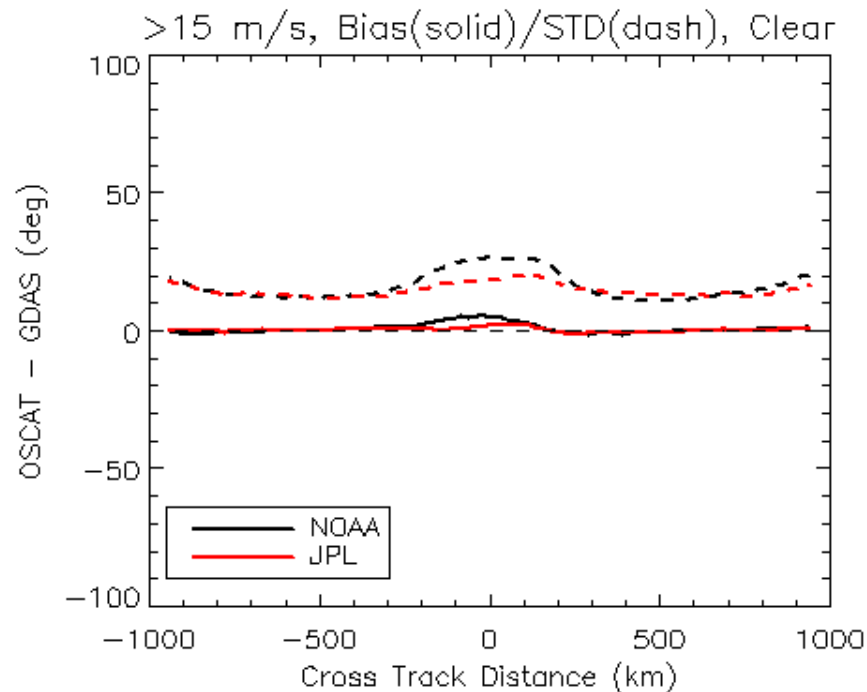
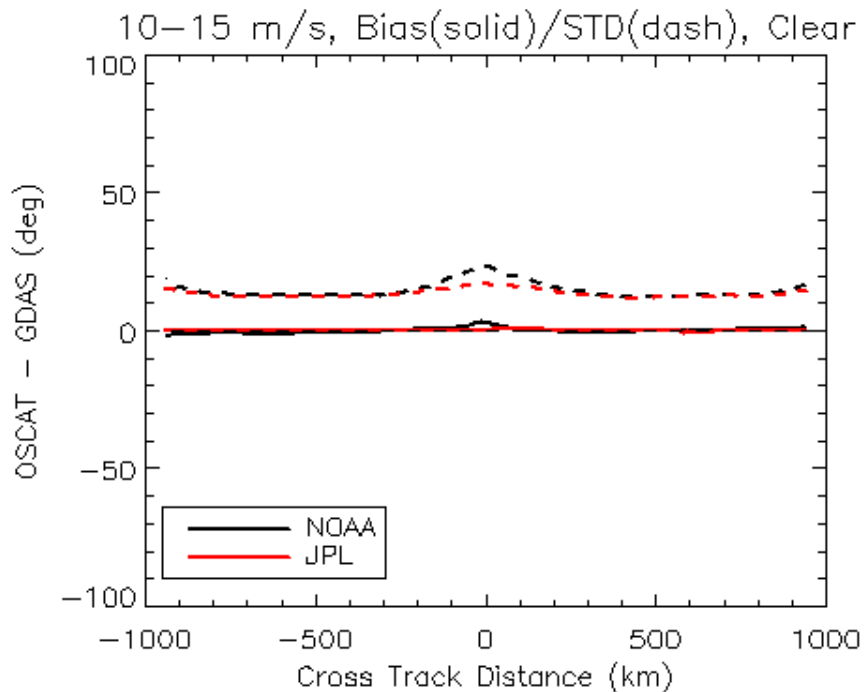
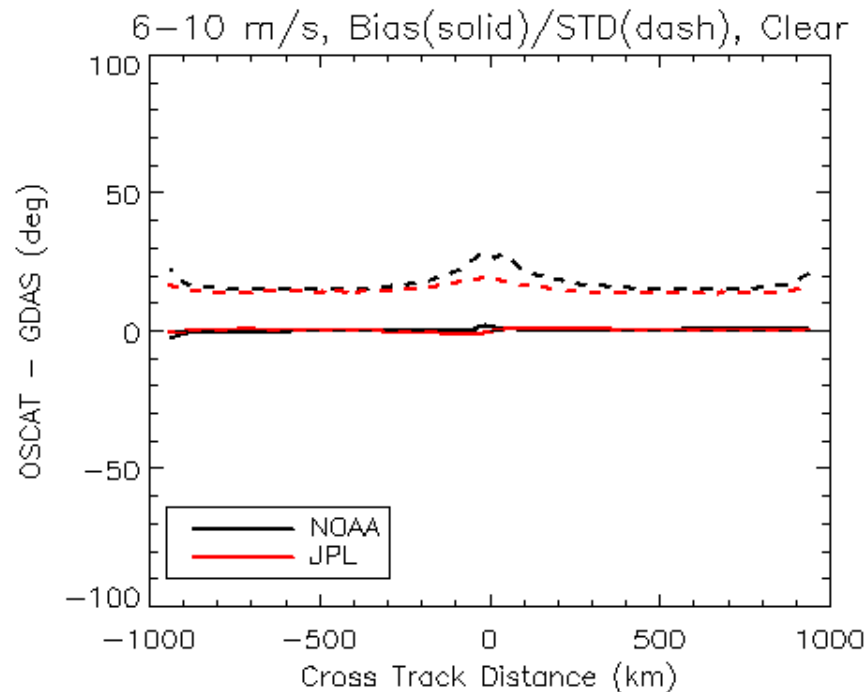
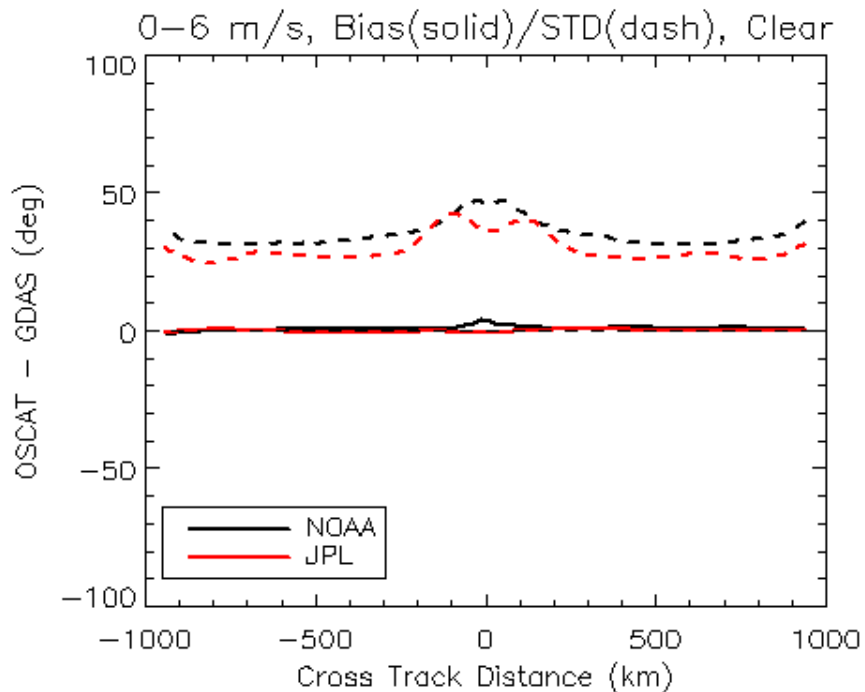


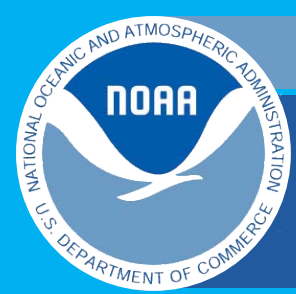


Wind Direction Comparisons





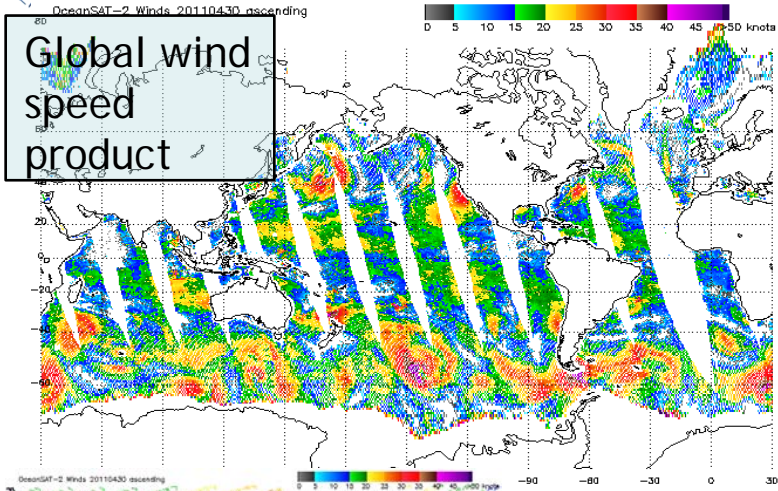




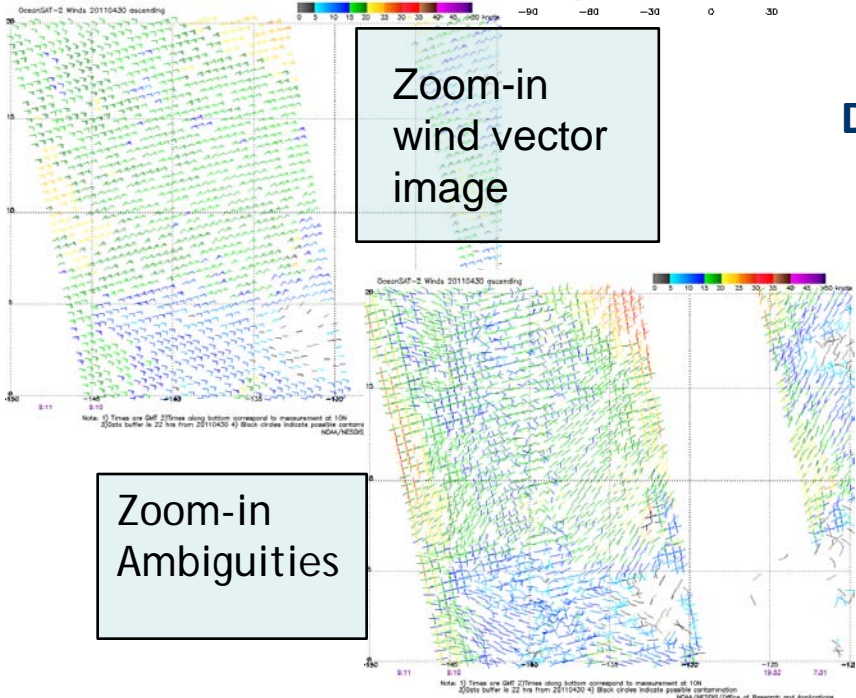
OSCAT Products Currently Available at NOAA



OSCAT Wind Products Currently Available at NOAA



50km L2B ISRO and 25km L2B NOAA generated wind product is available in operational demonstration mode to OPC and NHC forecasters within their NAWIPS environment and is also being made available others participating in product testing/validation

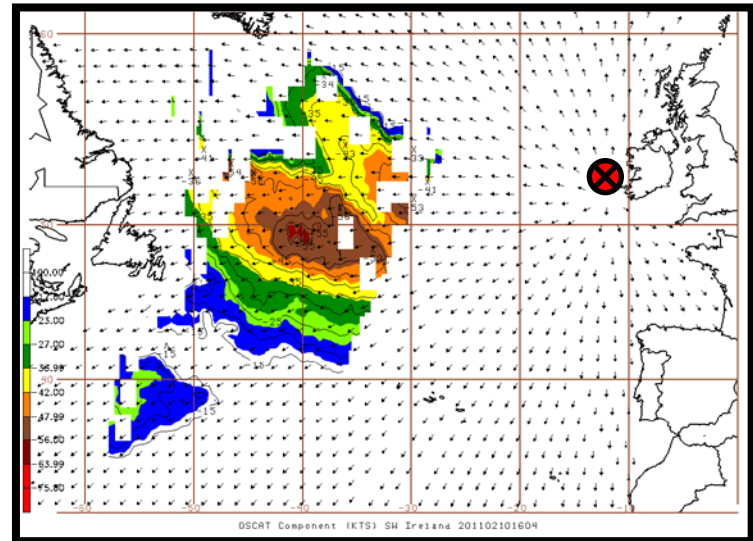
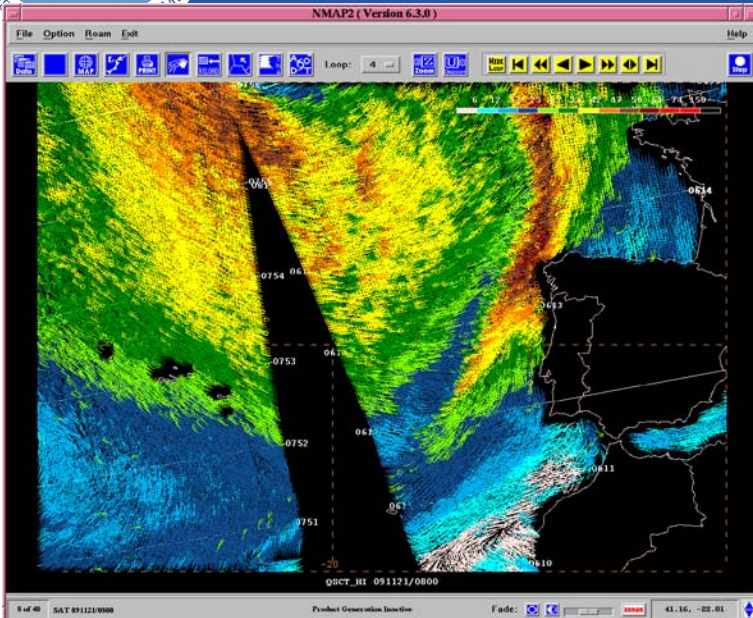


Data Products Available:

- Global surface wind vectors and ambiguities
 - OSCAT daily ice products (BYU – David Long)
 - Data files (L2B and OSCAT-lite)
 - Graphical products
- <http://manati.star.nesdis.noaa.gov/oscat>



OSCAT Display Capability Implemented in Latest NAWIPS



- STAR OWTeam developed MGDR-lite wind products suitable for ingestion to NAWIPS using ISRO L2B files

- Adapted NAWIPS software to be able to ingest OSCAT data.

- This change has been since implemented in latest NAWIPS version and is available to both OPC and NHC

- Developed a function in GEMPAK that allows for identification of areas of high wave generations and their propagation path.

- This utility has been extended to OSCAT data and is now available for testing

- Integration into NWS systems is being prepared ahead of time for OSCAT



Questions?

