



Operational Perspectives from NOAA

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- NEED Multiple scatterometers to extend the coverage of QuikSCAT and provide continuity
- UNDERWAY
 - EUMETSAT ASCAT on METOP series 1st is in orbit
 - ISRO Oceansat-2 Timely data access
 - SOA HY-2 Timely data access
- PROPOSED
 - CNSA/SOA/CNES CFOSAT Timely data access
 - NOAA will propose an operational scatterometer to follow QuikSCAT either a:
 - Functional equivalent or
 - Capability to improve the resolution of both the *rain ambiguity* and high wind speed regime

http://manati.orbit.nesdis.noaa.gov/SVW_nextgen/SVW_workshop_report_final.pdf





Timely Data Access will Enable Significant Reductions in Mean Revisit Times





Liu et al., 2007, Int. J. of Remote Sensing, in press.



Recent Events



- NOAA Operational Satellite Surface Vector Winds Requirements Workshop, Tropical Prediction Center – Miami, June 5-7, 2006 http://manati.orbit.nesdis.noaa.gov/SVW_nextgen/SVW_workshop_report_final.pdf
- \$4M for research to operations transitioning of ocean capabilities has now been provided for the third year in a row (FY05-07)
- New leader Mary Kicza at NOAA/NESDIS was quick to recognize and act on the difference in capabilities between WindSat and QuikSCAT
- New leader Mike Freilich at NASA/ESD shares with Kicza an appreciation of the challenge of *transitioning*
- The controversy over NOAA's lack of a QuikSCAT follow-on caused by the (then) Director of the NHC got this issue fully into the open
 - Both Kicza and Administrator Lautenbacher have testified to Congress
 - She and the (then) head of the NWS have visited JPL
- NPOESS Nunn-McCurdy impact on climate data records has generated some interest in the Administration
 - OSTP made \$15M available to address this in FY07
 - Of this amount, the NOAA scatterometer study received \$500K (to which we secured an additional \$500K as a match)



Extended Ocean Vector Winds Mission (XOVWM) Observatory

- XOVWM to provide the nextgeneration wind measurement capabilities:
 - Spatial resolution ~ 5km
 - Wind speed range up to
 Category 5 hurricanes
 (155 mph winds)
 - All-weather capabilities, even in rain
- XOVWM builds on proven technologies:
 - Ku-band pencil beam (Quik-SCAT) and SAR for high res.
 - C-band (ASCAT) for high winds and better performance in rain
 - X-band radiometer
 (AMSR/WindSat) for improved rain correction



Courtesy of Ernesto Rodriguez, JPL



XOVWM *Mission Characteristics*

- Orbit: 800 km altitude, sun-synchronous
- Swath: 1800 km
 - 90% global coverage/day
- Scatterometer spatial resolution:
 - Ku-band: 5 km
 - C-band: 10 km
- Performance requirements*
 - 2m/s rms speed up to 20 m/s
 - 10% rms speed above 20 m/s
 - 20° rms direction
- Instrument characteristics*
 - Antenna size: 3.5m x 5m
 - Instrument weight: ~305kg
 - Instrument DC power: ~780W



* current best estimates



Next Steps



- QuikSCAT Follow-on
 - Significant interest on the part of operational forecasters in the enhanced capabilities of an XOVWM
 - Anticipate decision early in CY08 on which option to pursue
 - We will be pursuing an FY10 budget initiative for this
- Timely access to data from Chinese and Indian scatterometers is being pursued via:
 - Bilateral arrangements
 - Proposed CEOS Constellation
 - Coordinating Group of Meteorological Satellites
 - WMO Satellite Program and World Weather Watch8