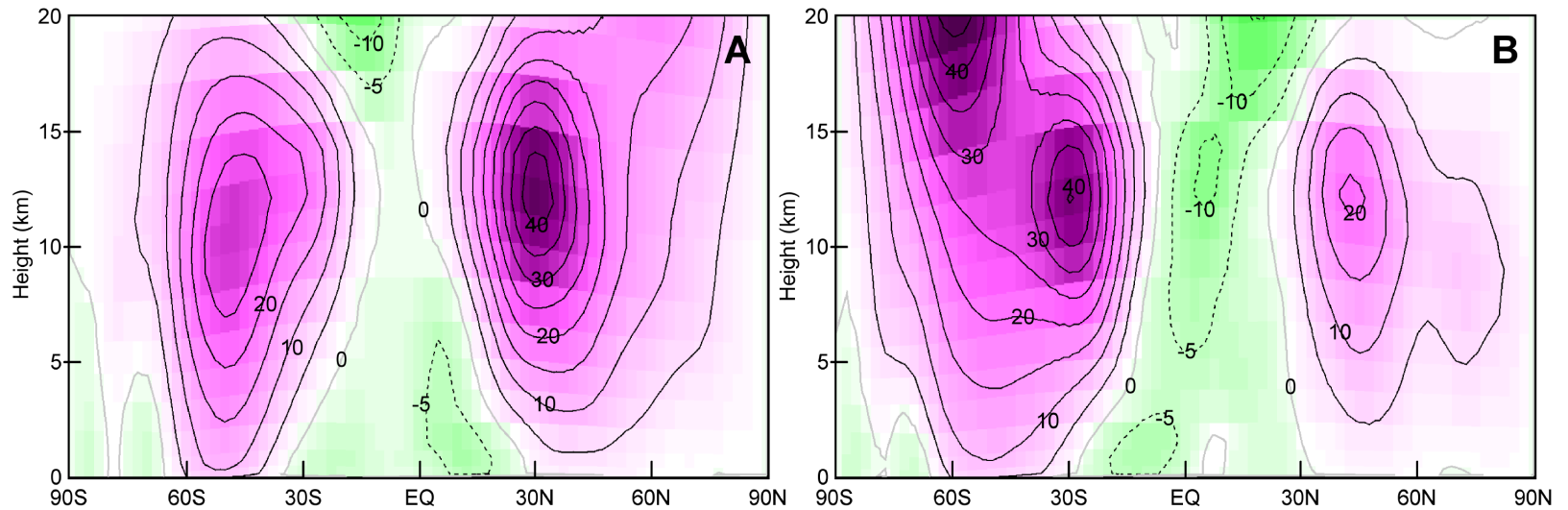
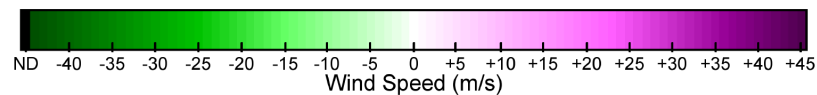


# NCEP-2/MISR Zonal Mean Winds 2001-2007

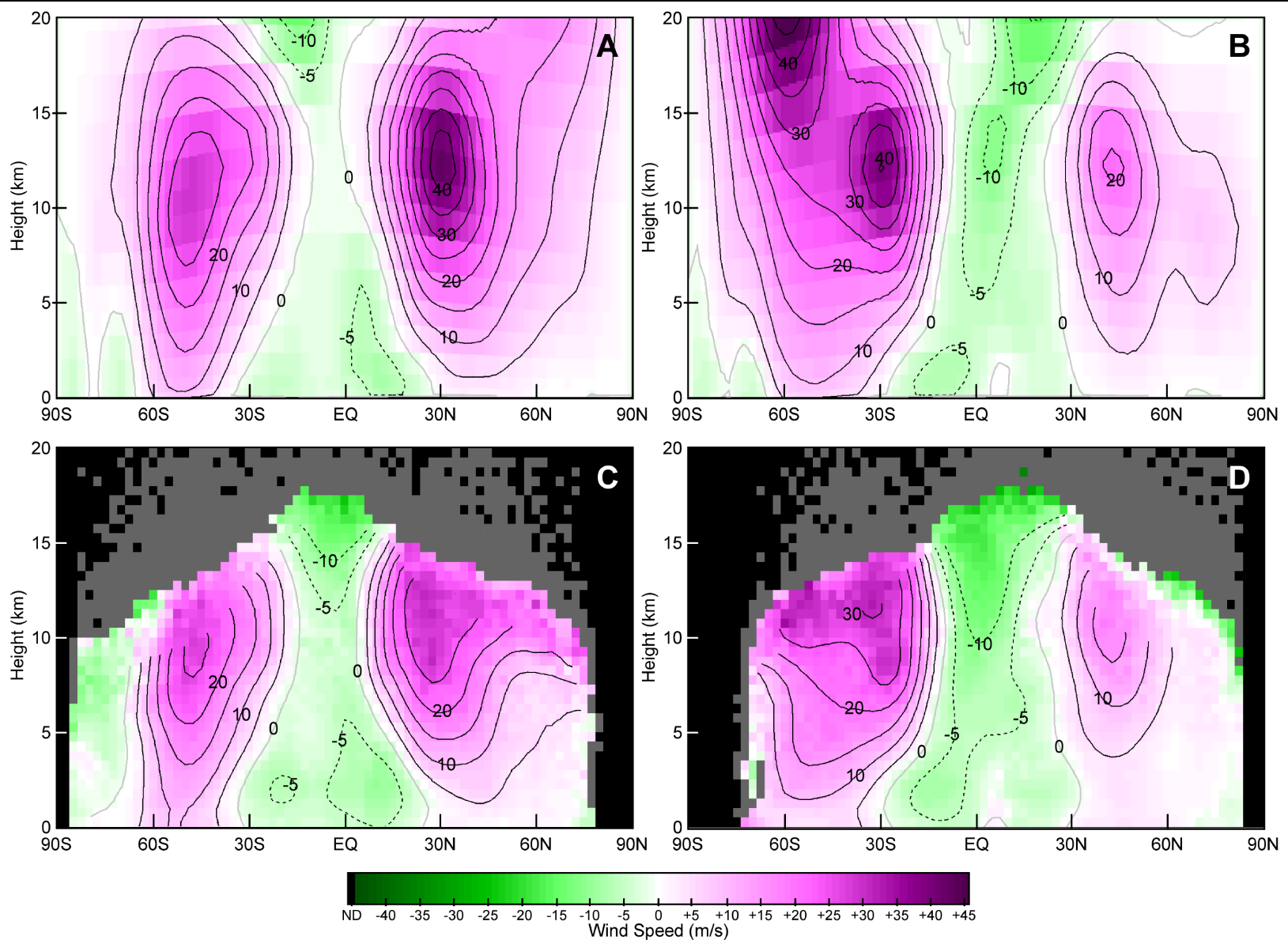


DJF

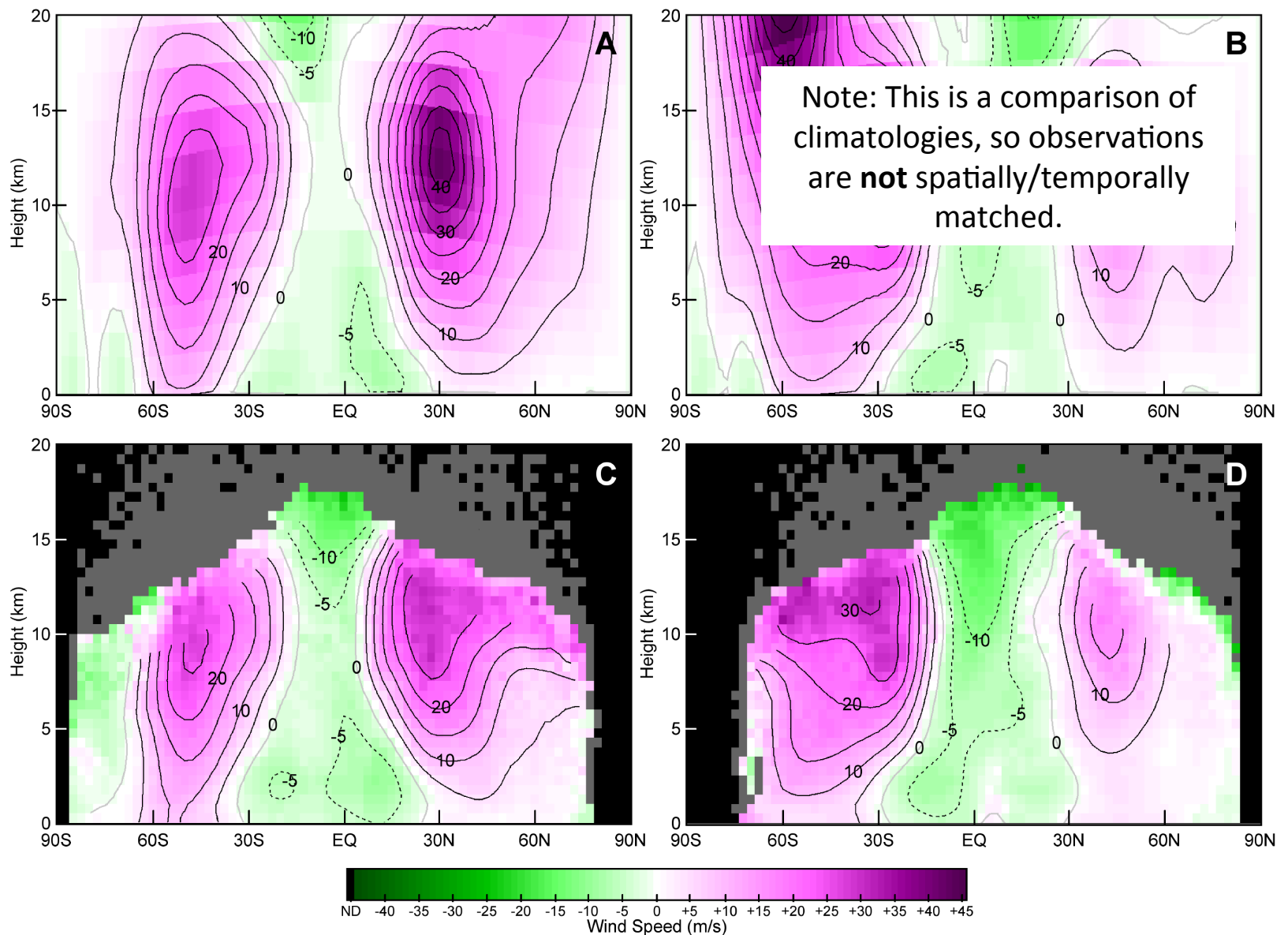
JJA



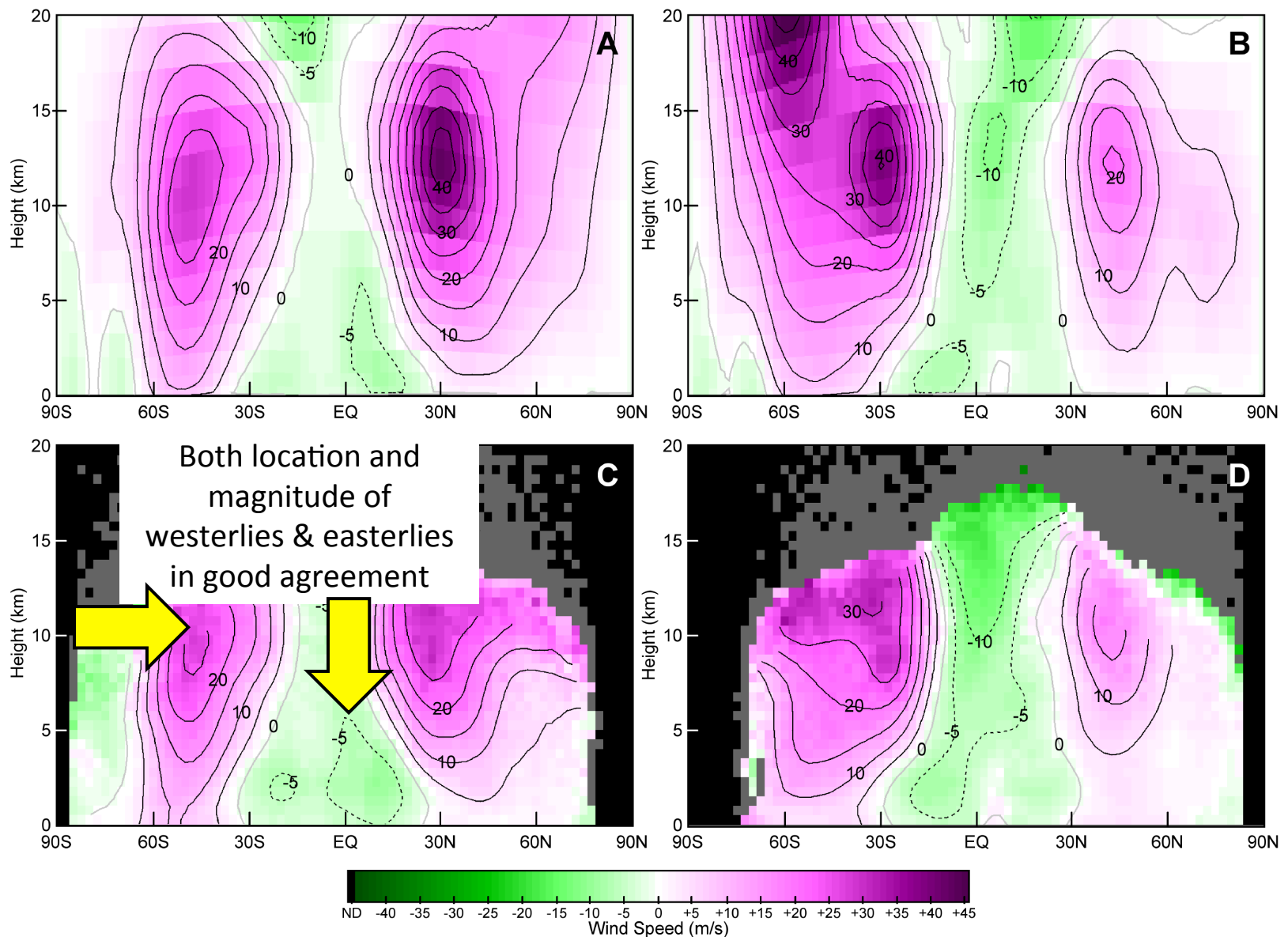
# NCEP-2/MISR Zonal Mean Winds 2001-2007



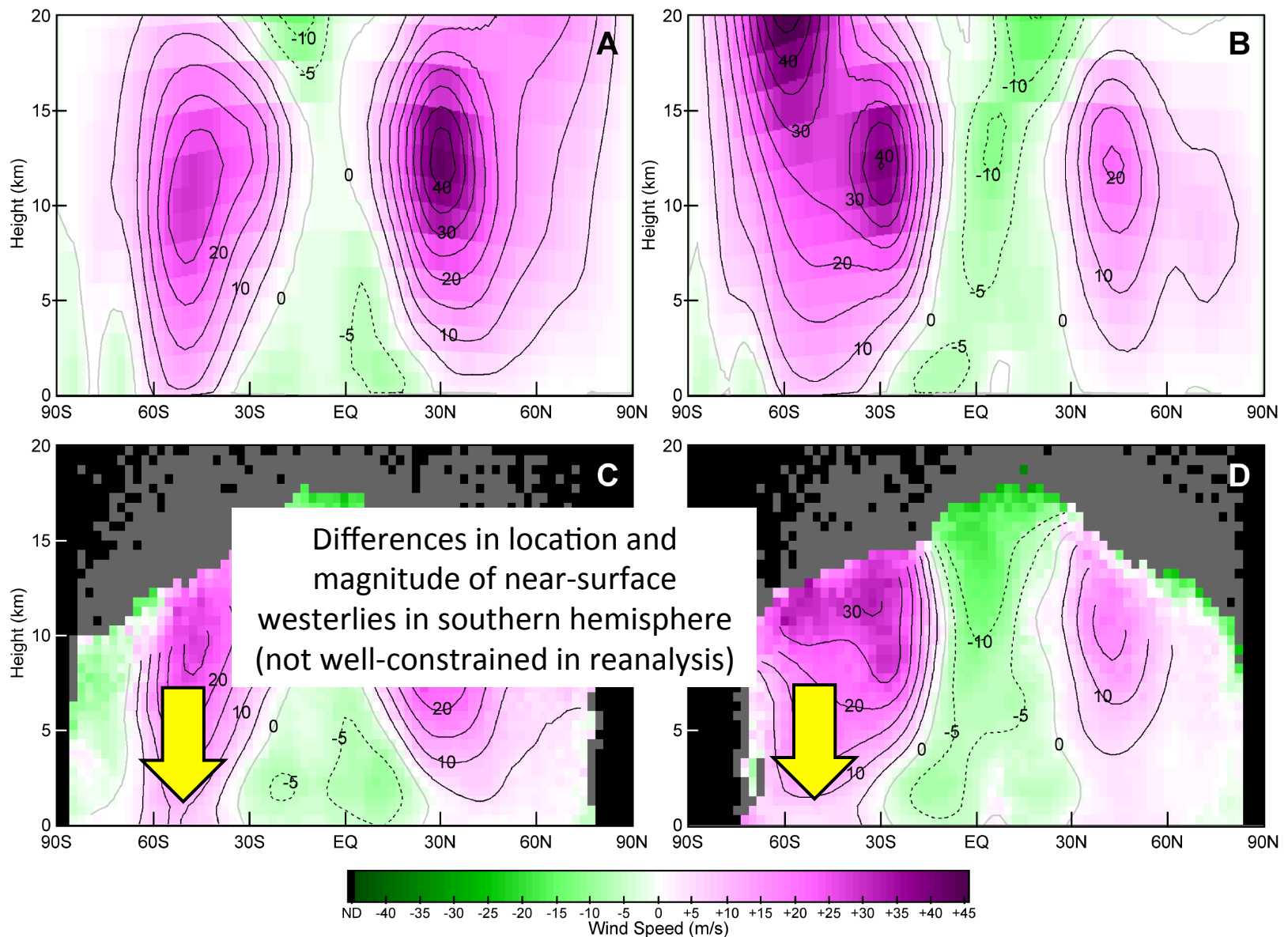
# NCEP-2/MISR Zonal Mean Winds 2001-2007



# NCEP-2/MISR Zonal Mean Winds 2001-2007

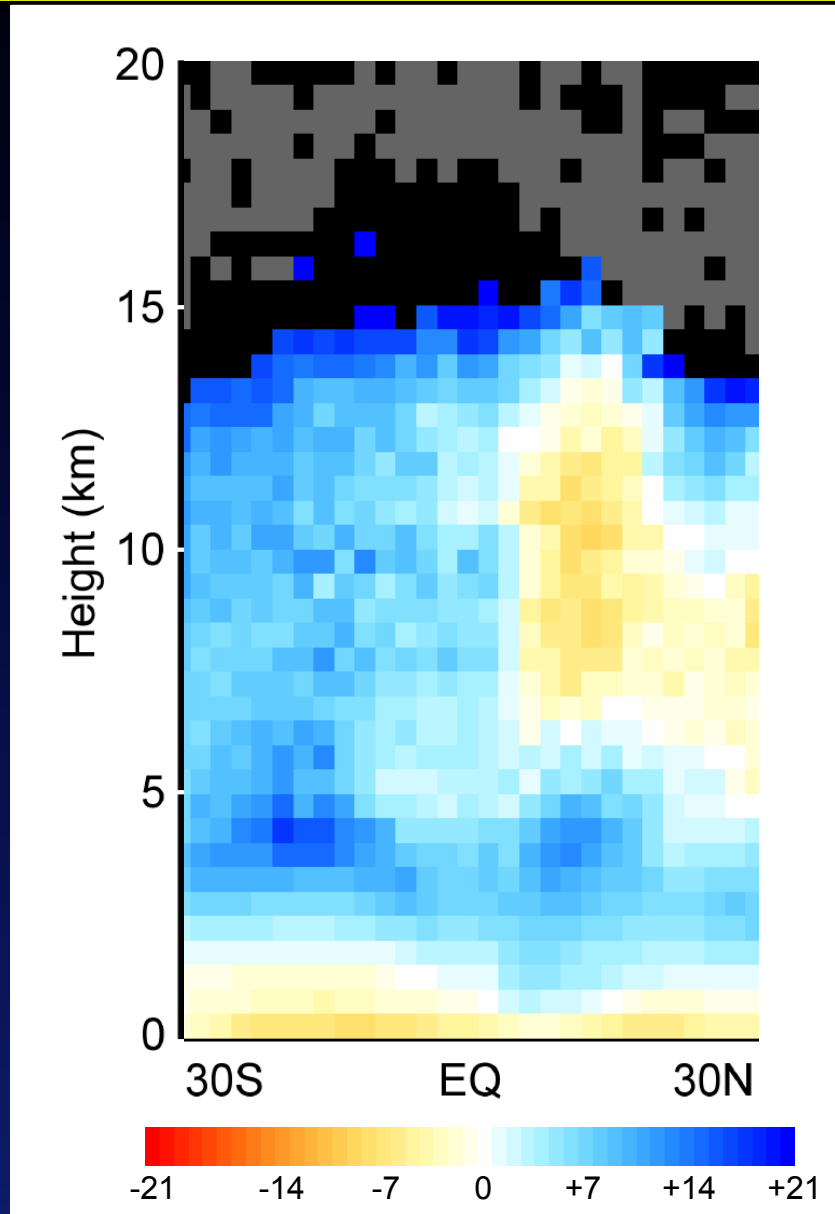


# NCEP-2/MISR Zonal Mean Winds 2001-2007



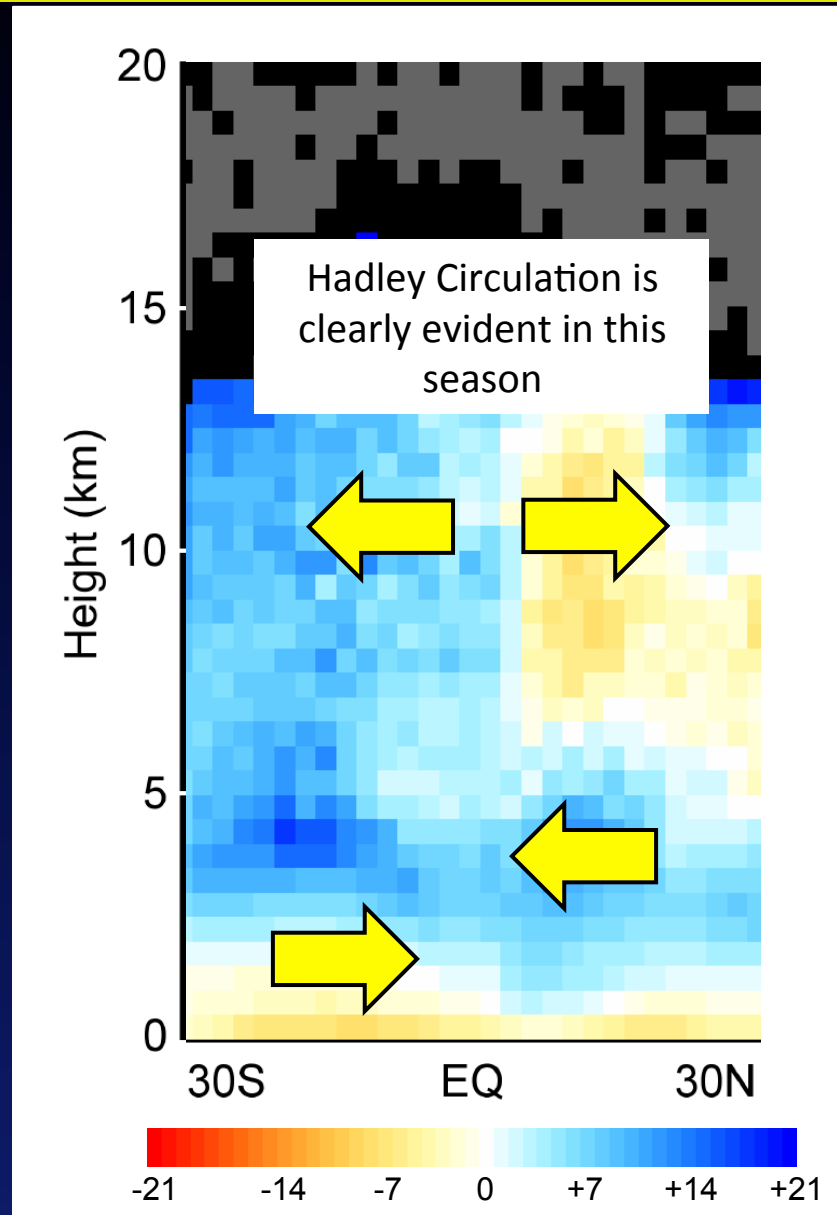
# MISR Tropical Meridional Winds 2001-2007

DJF  
(Ocean Only)

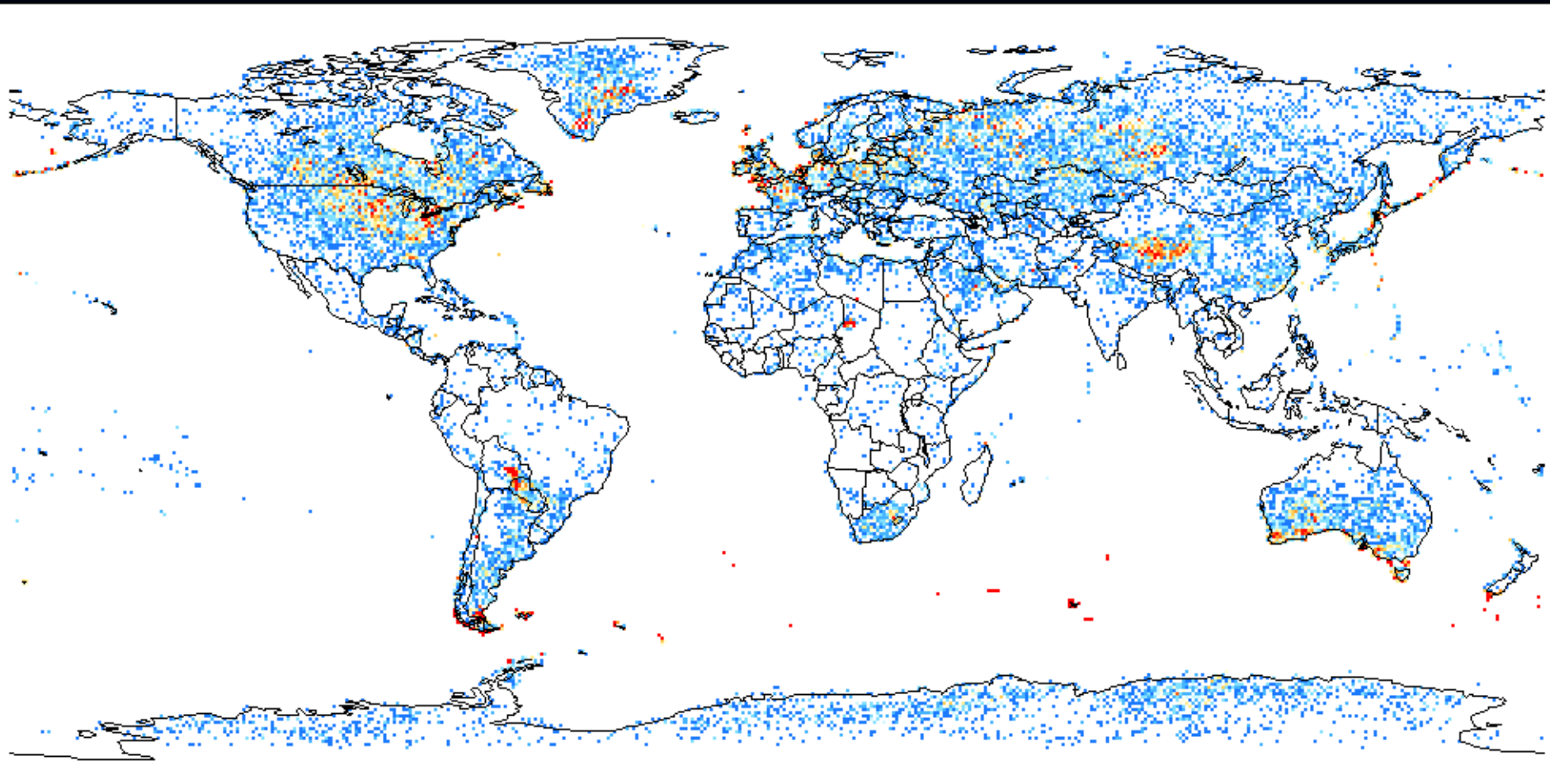


# MISR Tropical Meridional Winds 2001-2007

DJF  
(Ocean Only)



# Frequency of Wind Speeds $> 20$ m/s Over Land



Height  $\leq 5$  km AGL

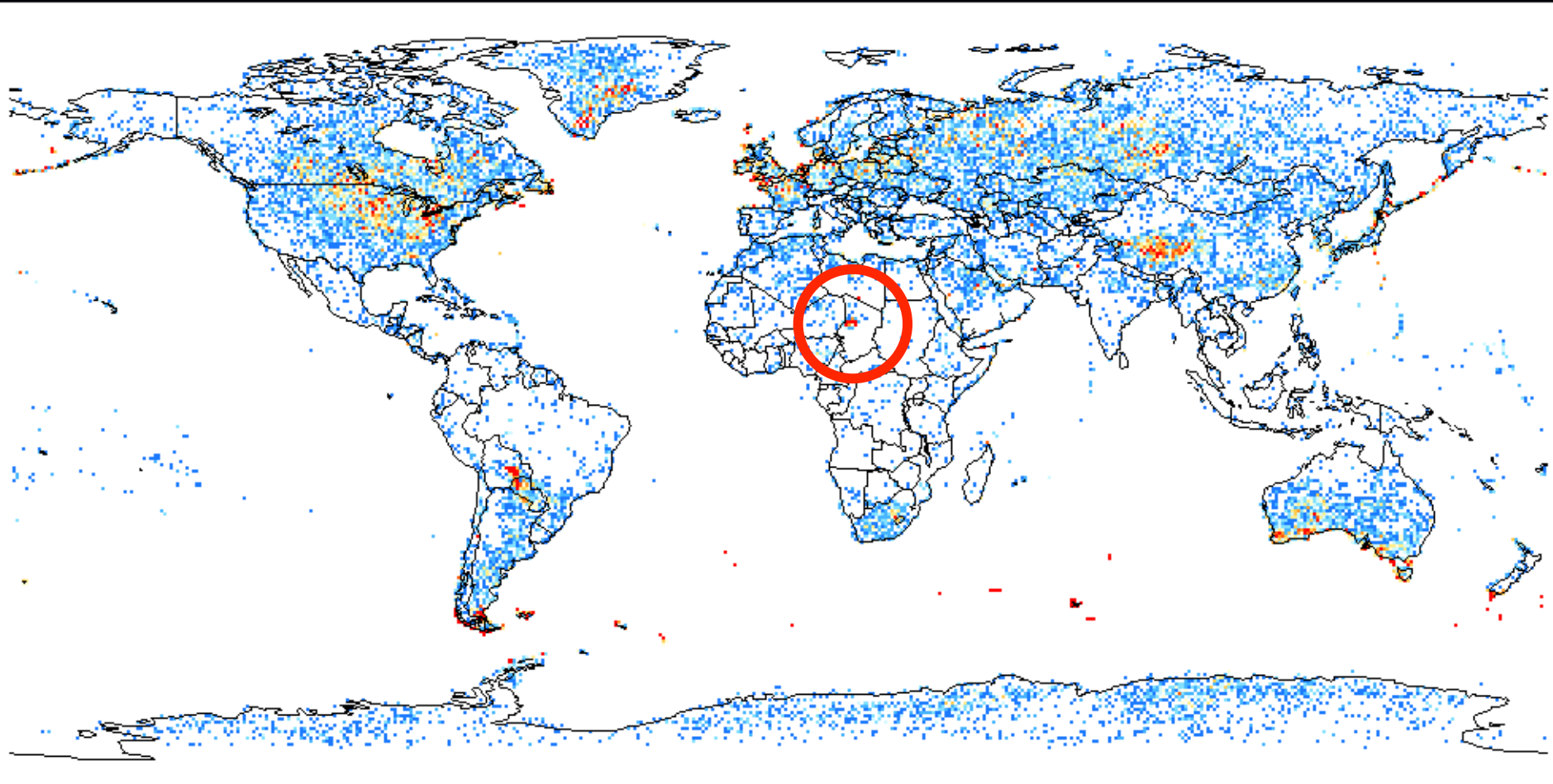


Low

High



# Frequency of Wind Speeds $> 20$ m/s Over Land

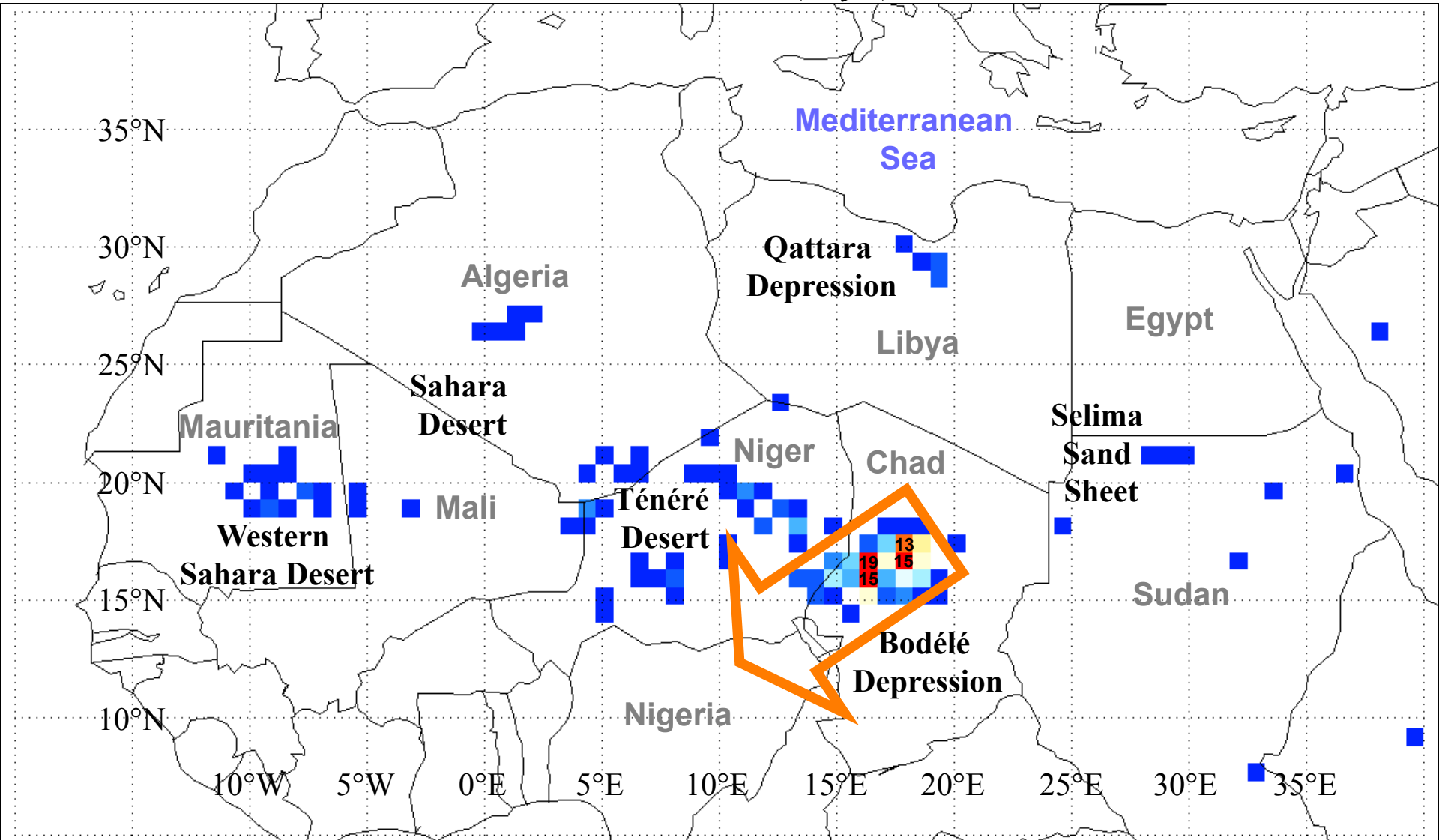


Height  $\leq 5$  km AGL

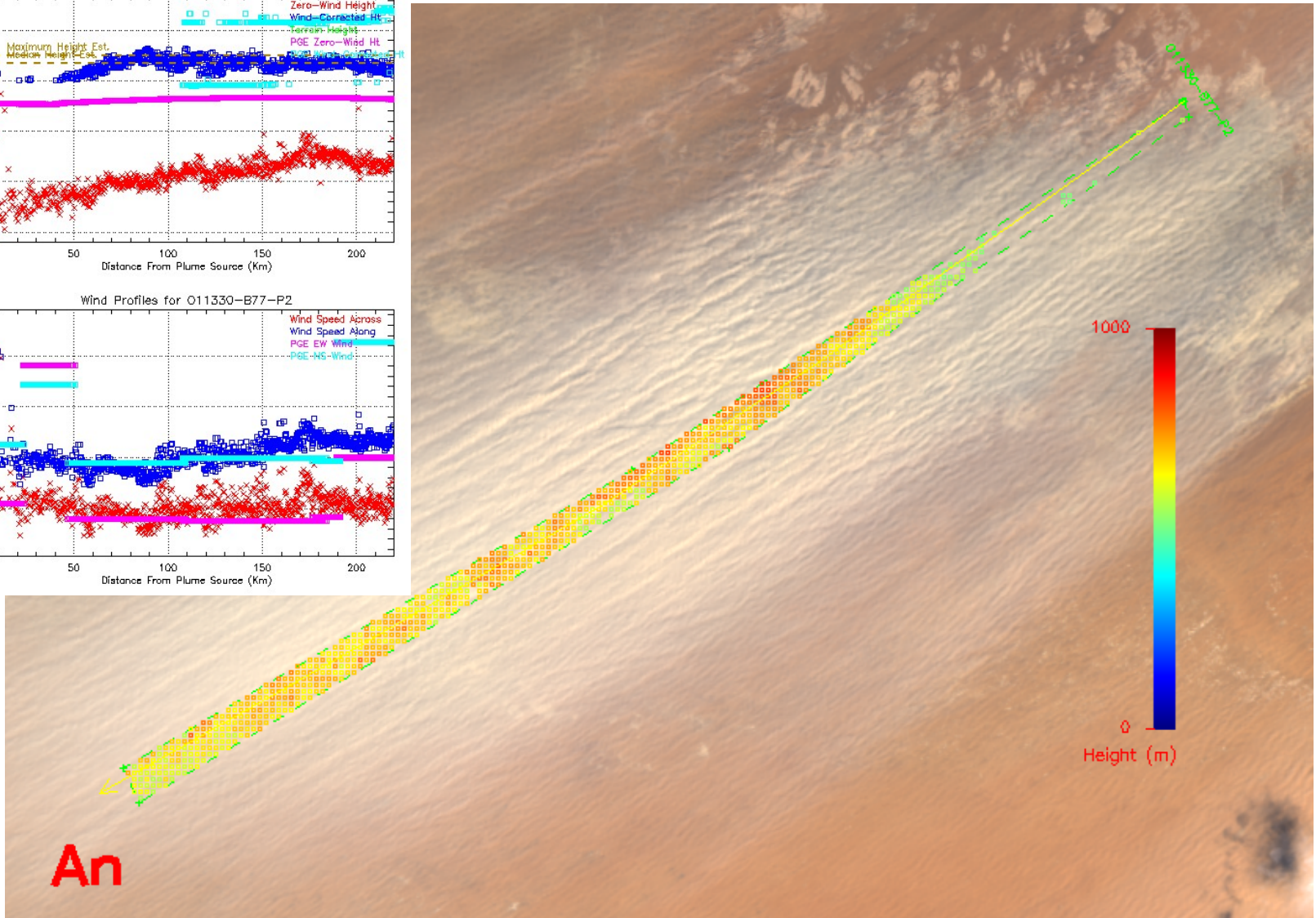
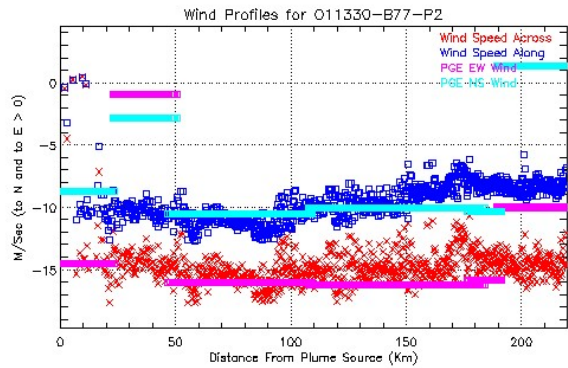
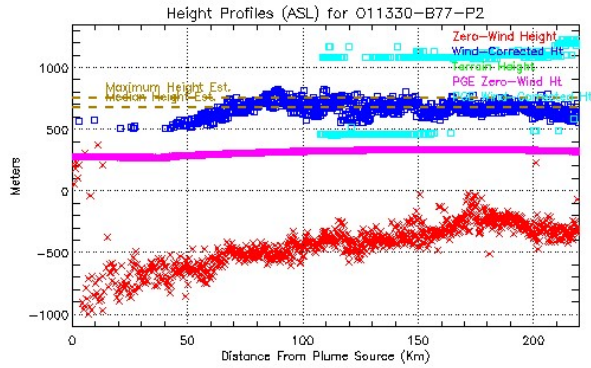
Low

High

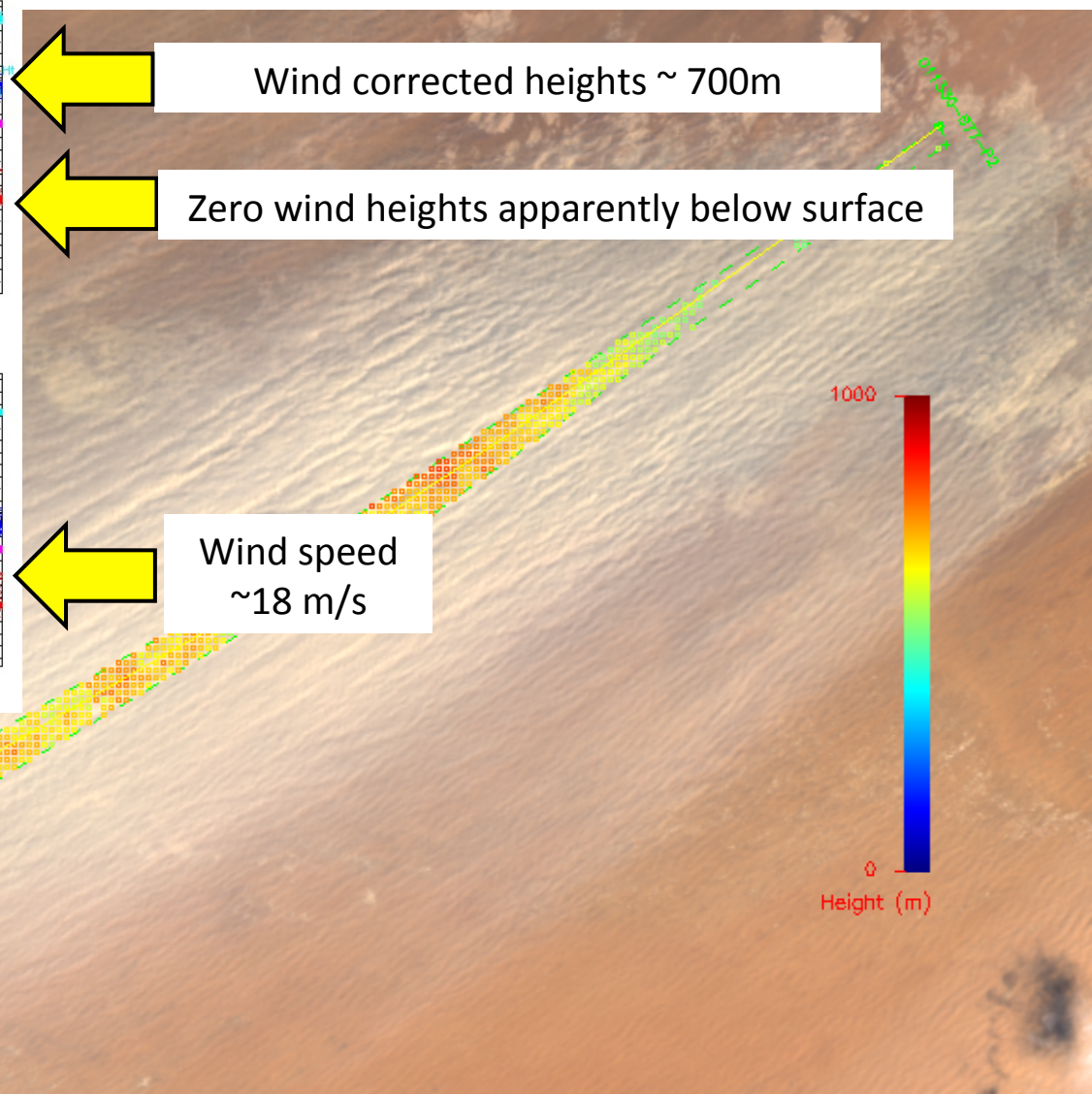
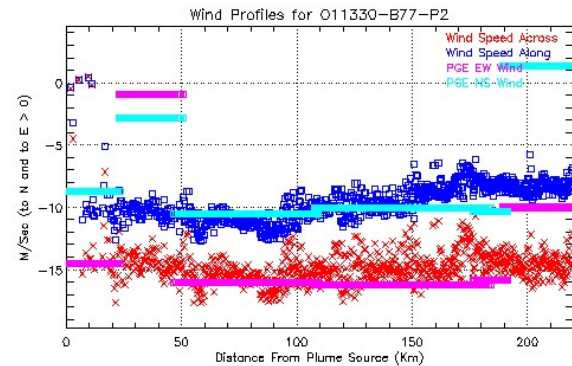
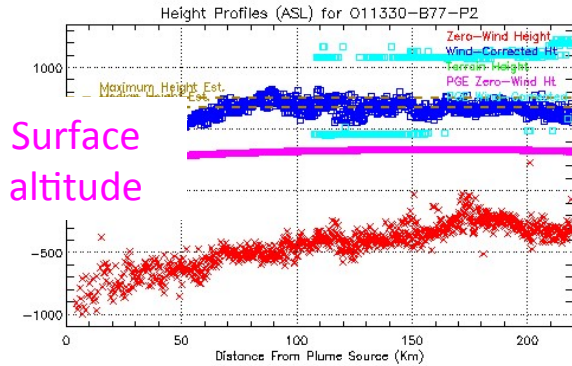
# Frequency of Wind Speeds Greater than 20 m/s over Africa (DJF)



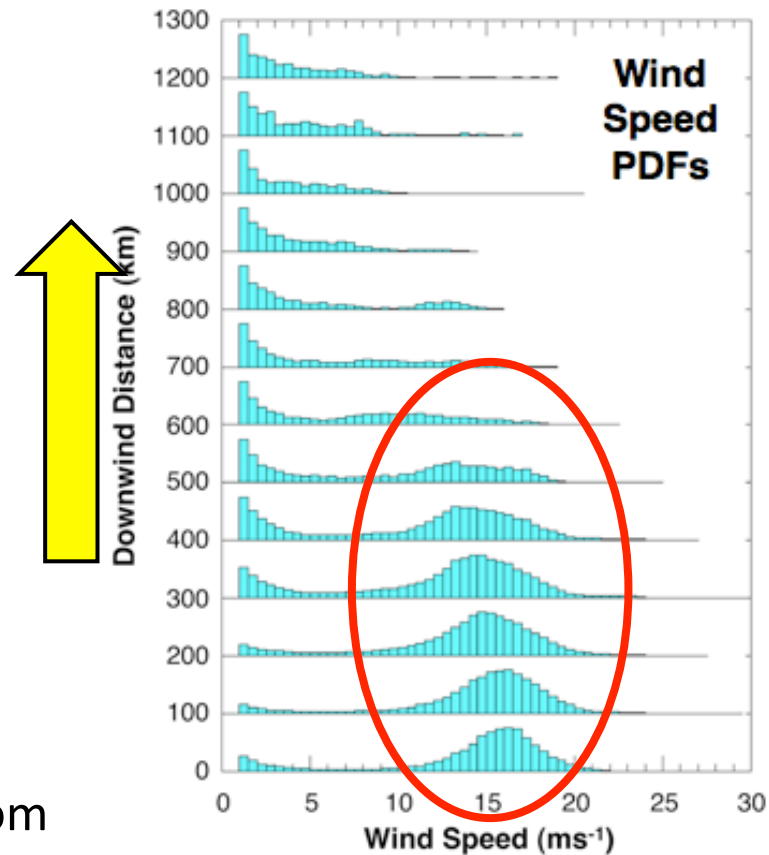
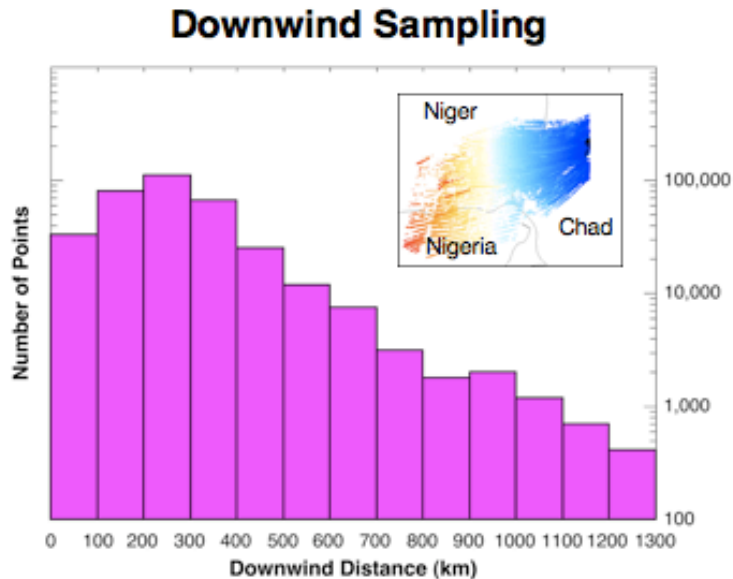
# Hand Digitized Case using MINX Software



# Hand Digitized Case using MINX Software



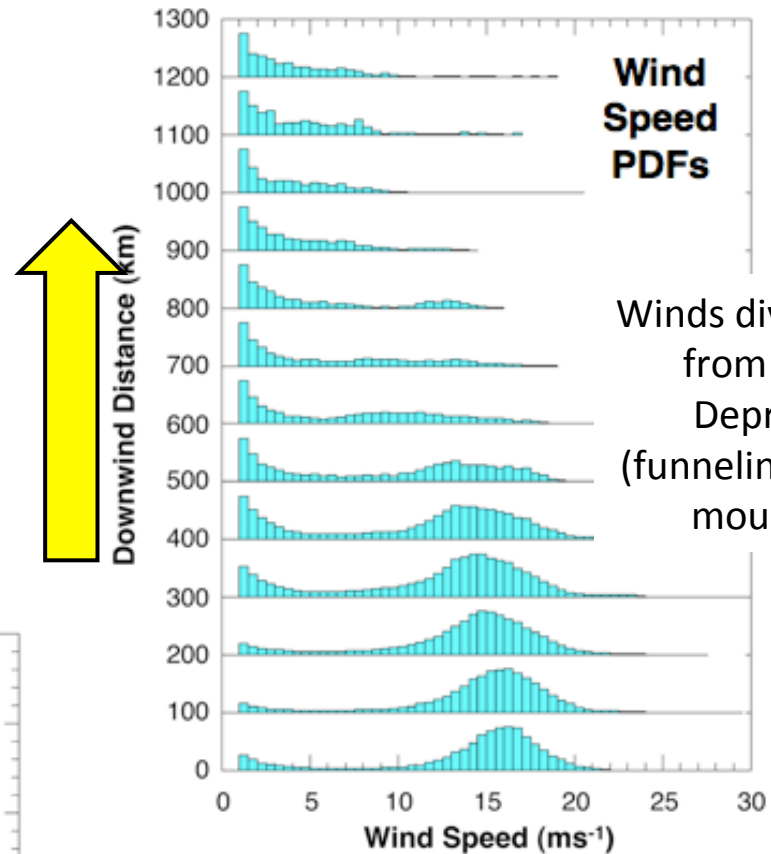
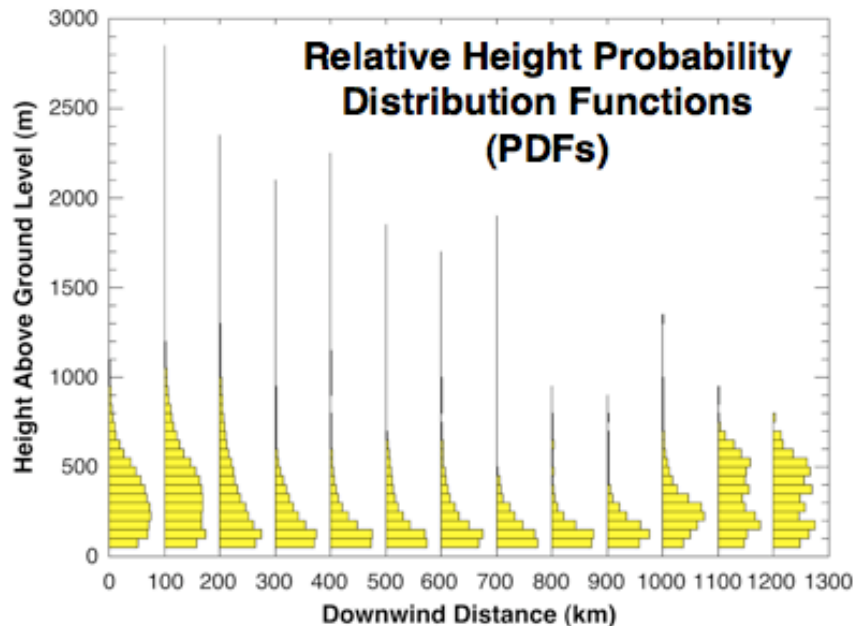
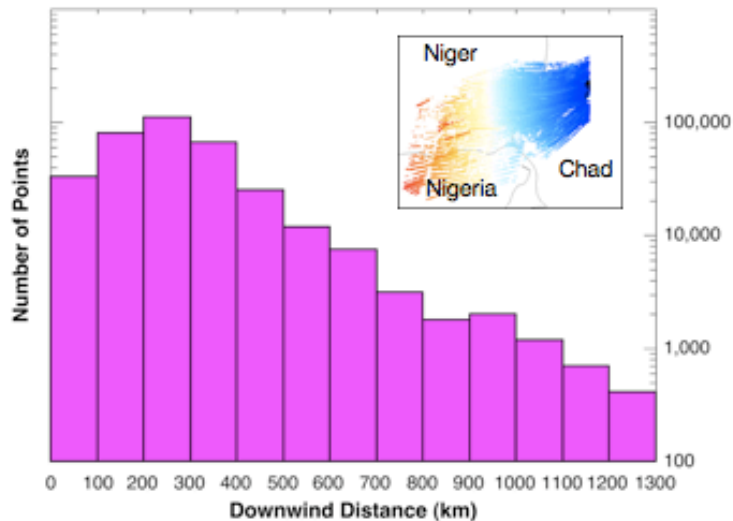
# Downwind Bodélé Dust Plume Behavior



Analysis of 476 MISR dust plumes from the Bodélé Depression in Chad. Wind speeds decrease and histogram becomes broader with distance from the dust source where low level jet is funneled between two mountain ranges

# Downwind Bodélé Dust Plume Behavior

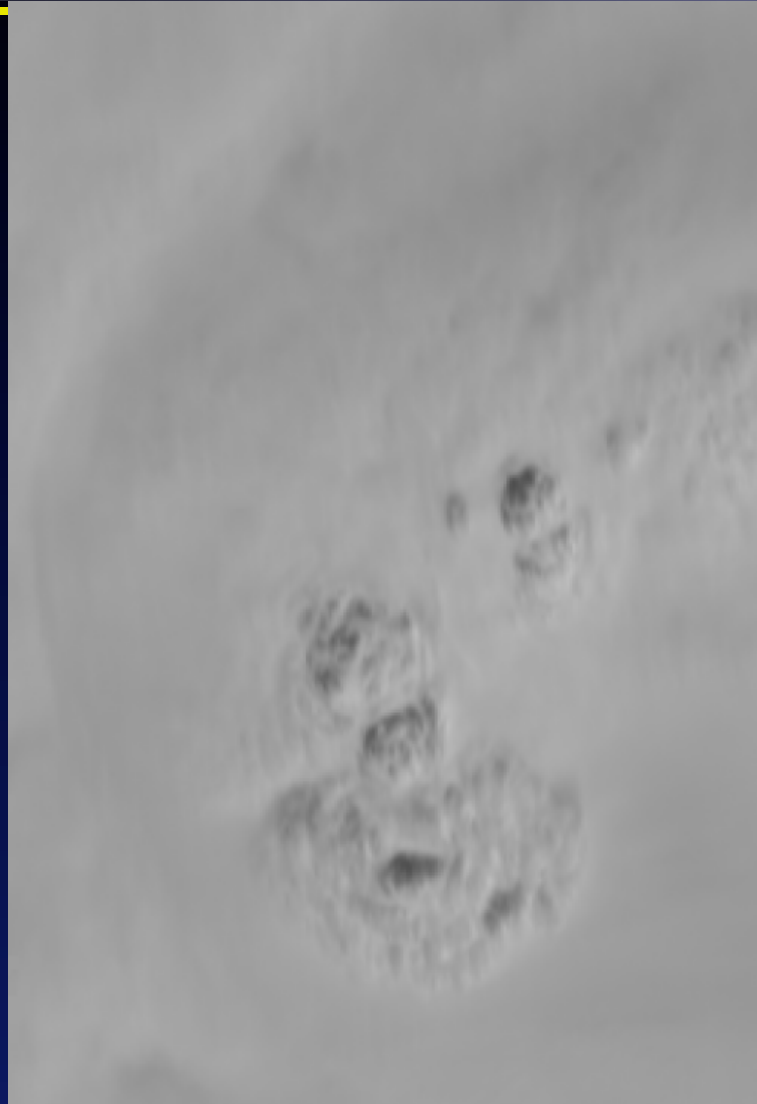
## Downwind Sampling



Winds diverge away from Bodélé Depression (funneling between mountains)

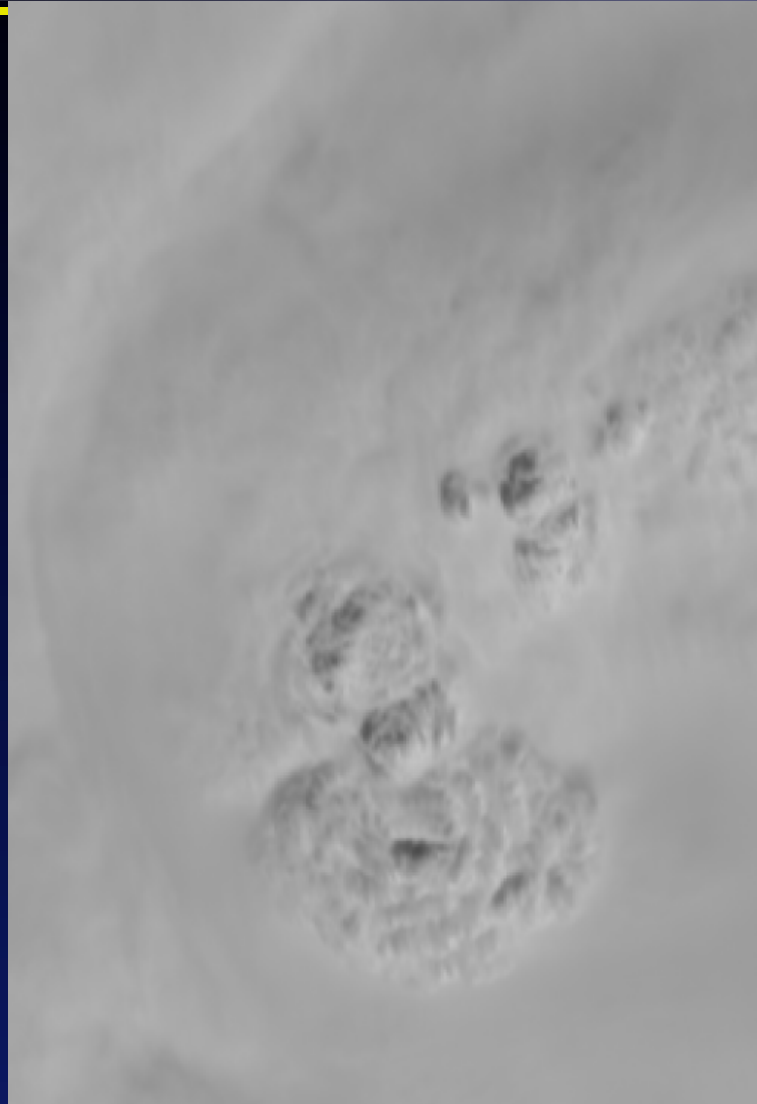
**344,102** dust plume data points downwind from the primary dust source region at **18.2°E longitude** (see color inset) were analyzed as a function of distance for all seasons. Note height and speed PDFs are **independently normalized** within each distance bin.

# High-Resolution Cross-Track Winds



Hurricane  
Ida  
11/08/2009

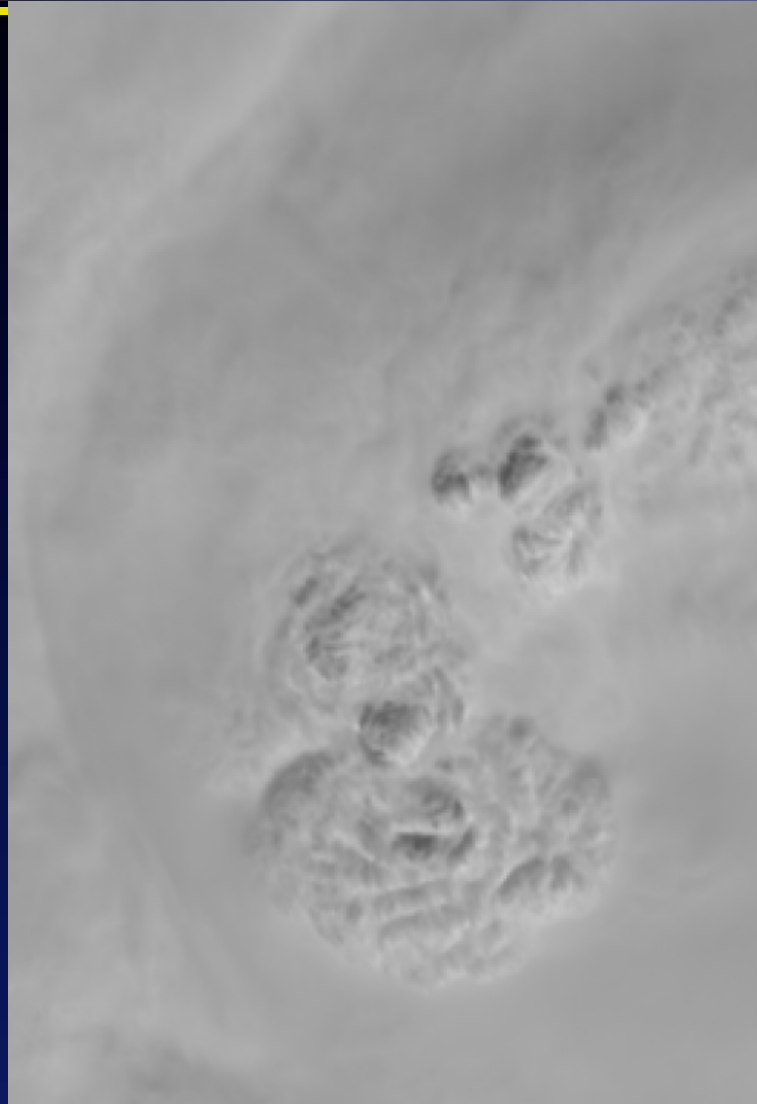
# High-Resolution Cross-Track Winds



Hurricane  
Ida  
11/08/2009

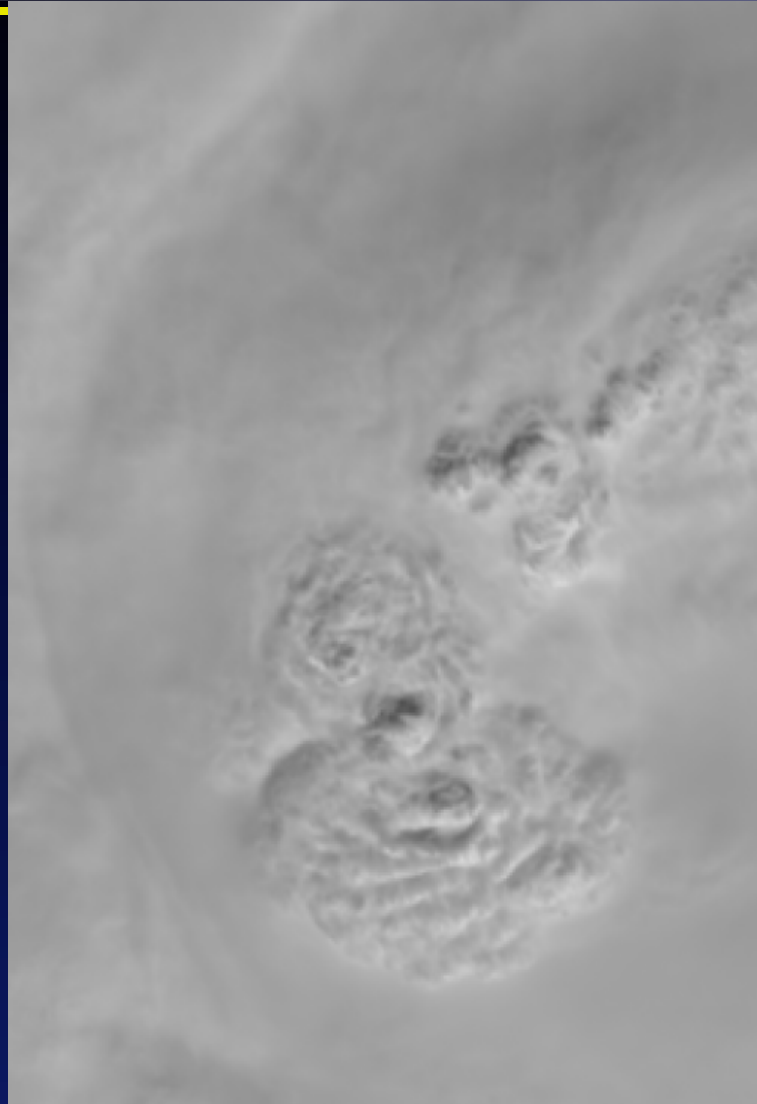


# High-Resolution Cross-Track Winds



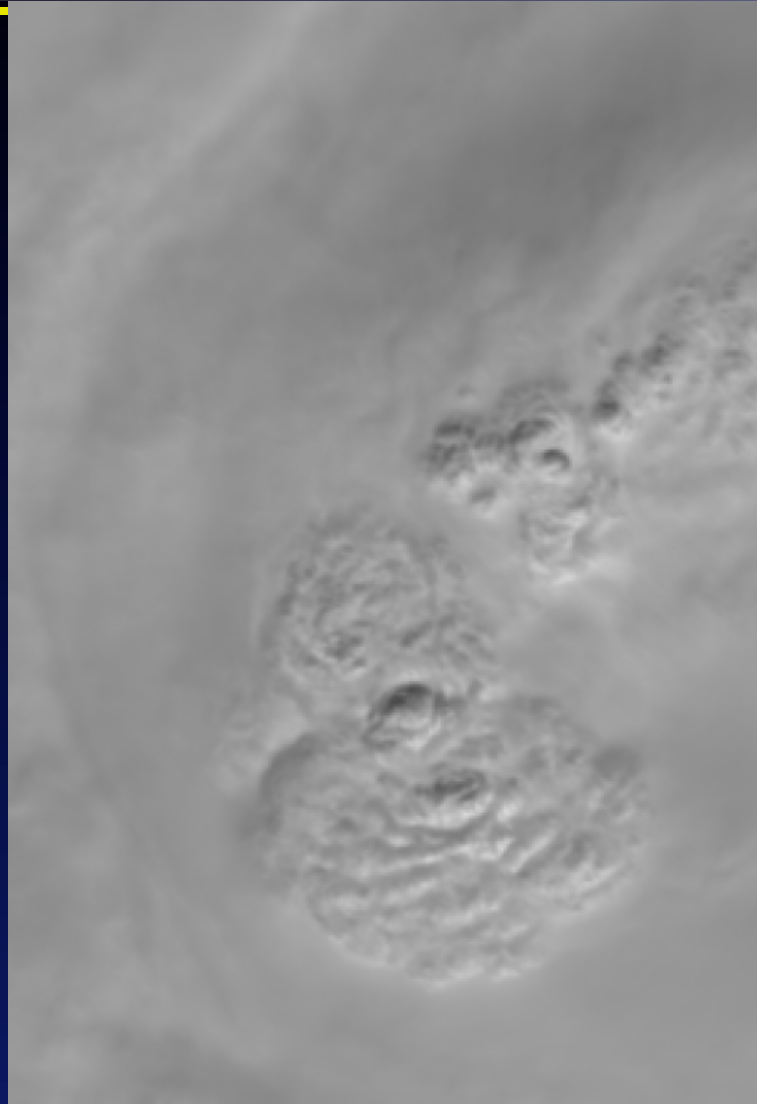
Hurricane  
Ida  
11/08/2009

# High-Resolution Cross-Track Winds



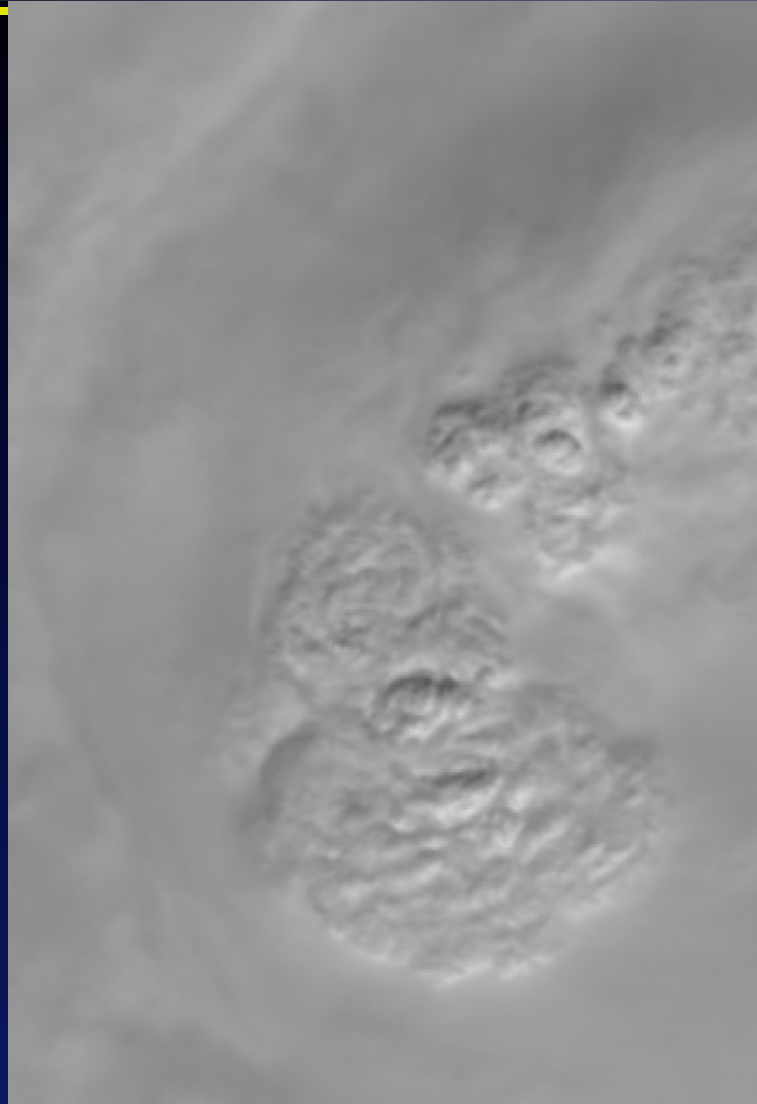
Hurricane  
Ida  
11/08/2009

# High-Resolution Cross-Track Winds



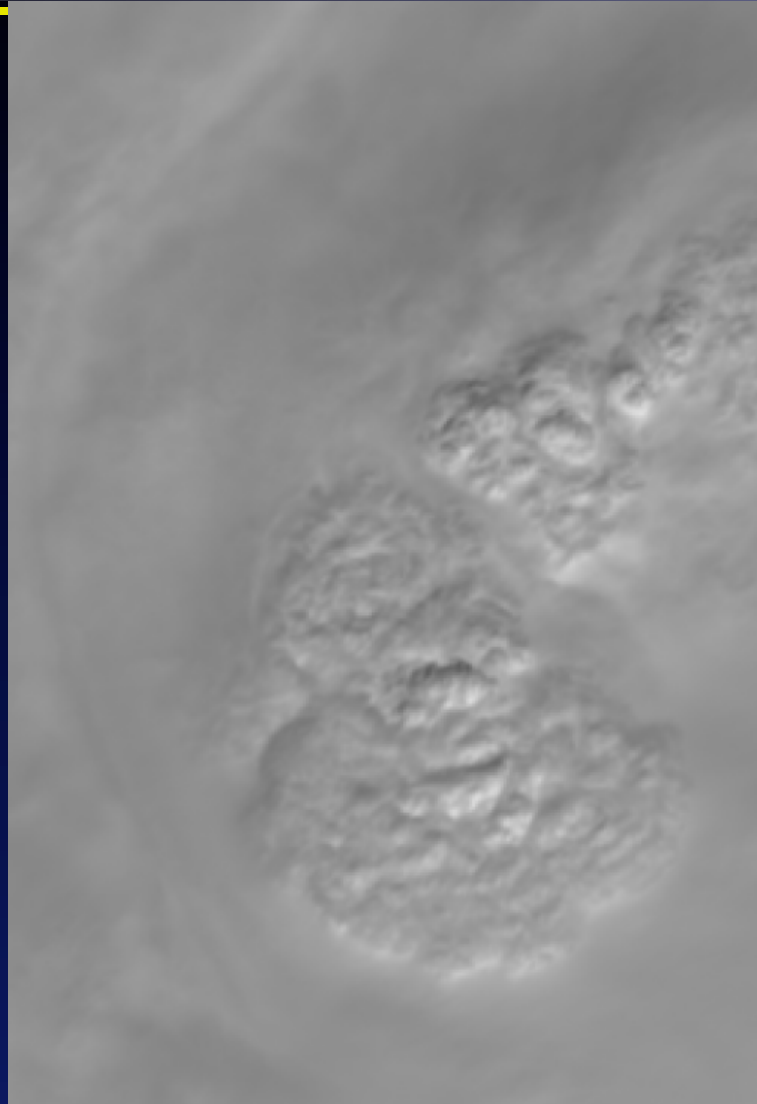
Hurricane  
Ida  
11/08/2009

# High-Resolution Cross-Track Winds



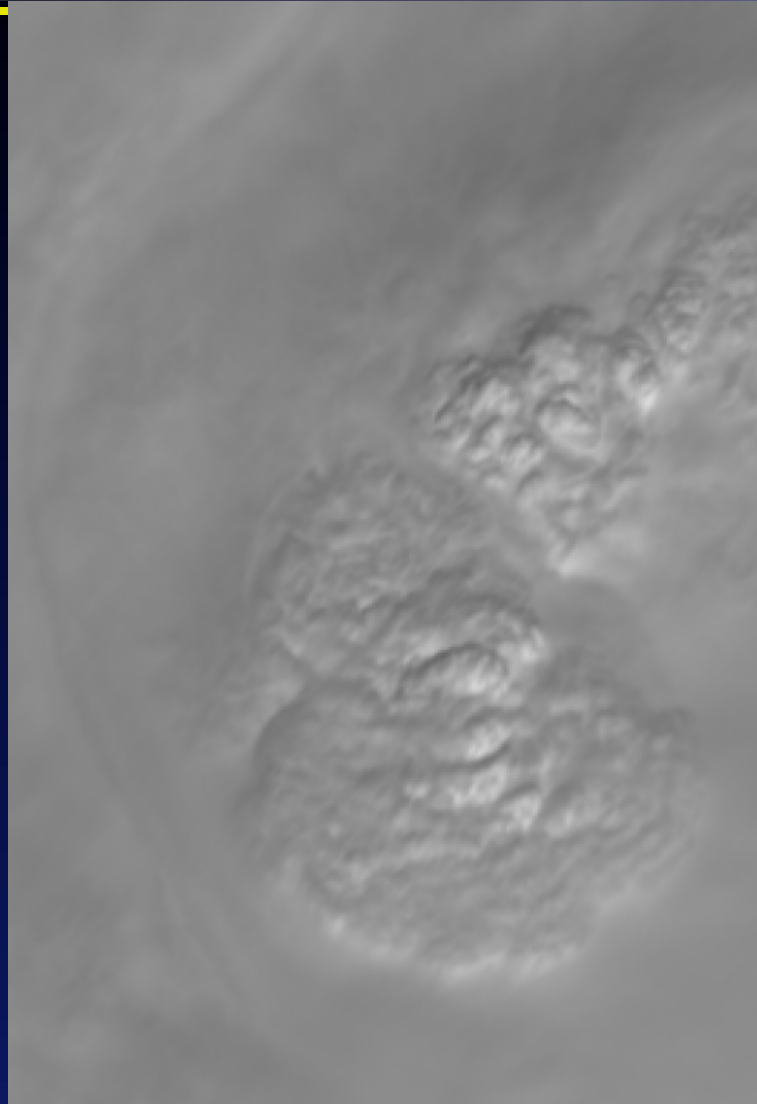
Hurricane  
Ida  
11/08/2009

# High-Resolution Cross-Track Winds



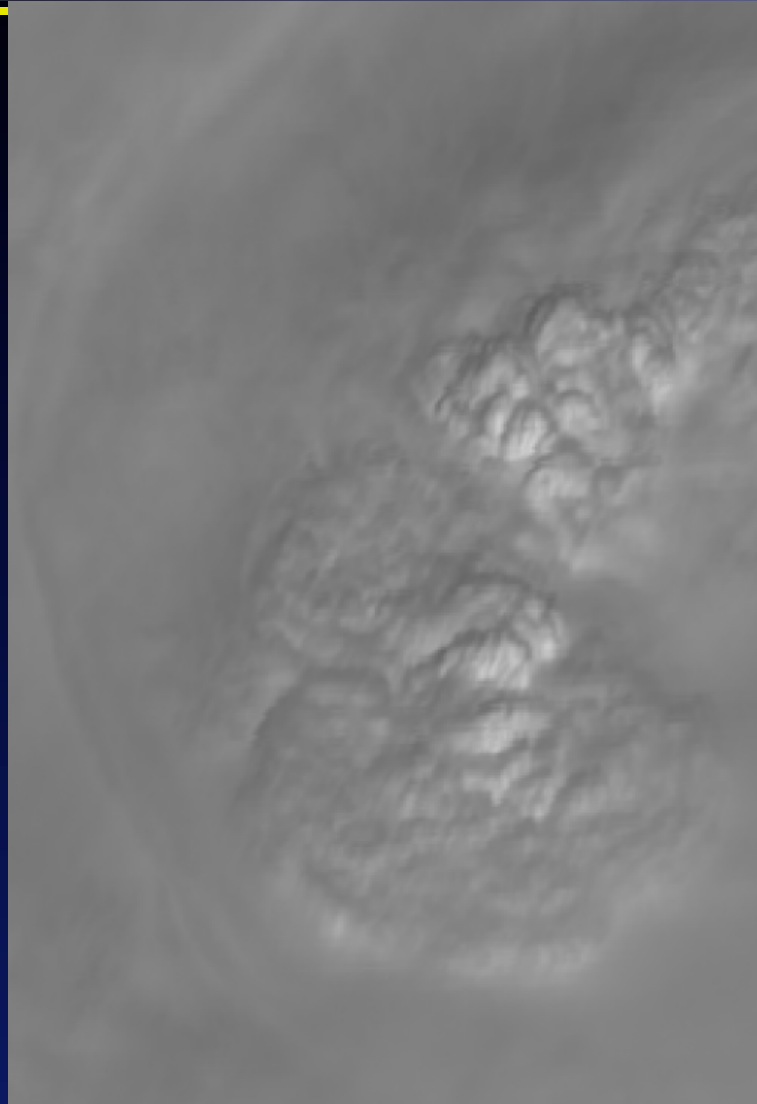
Hurricane  
Ida  
11/08/2009

# High-Resolution Cross-Track Winds



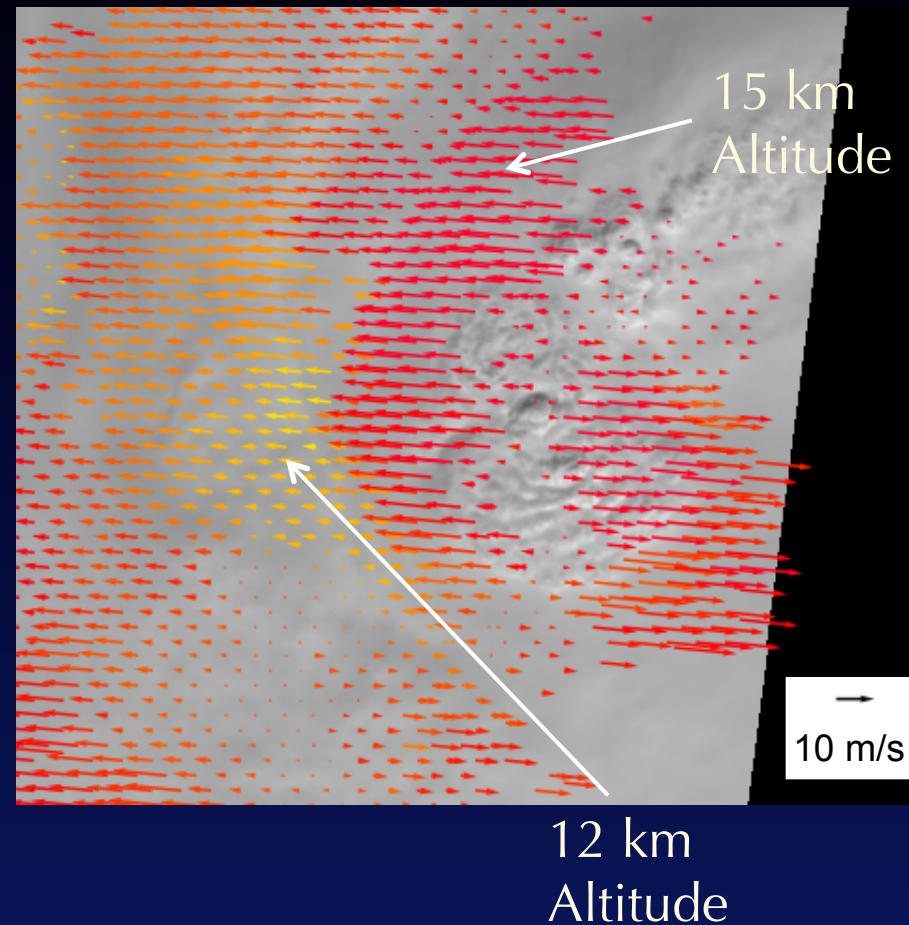
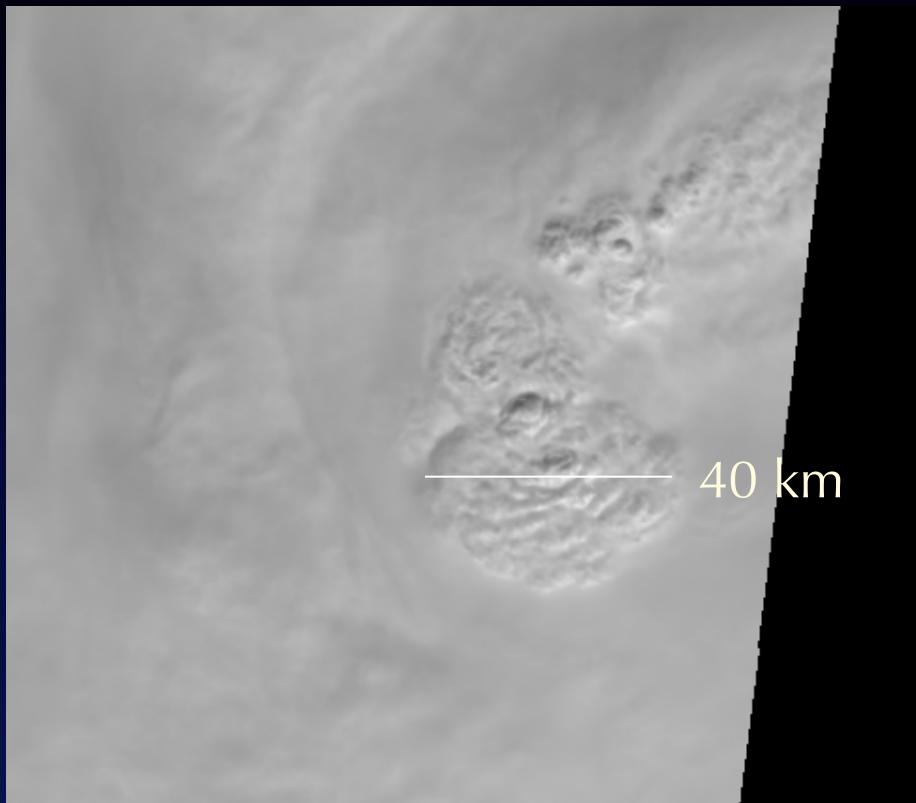
Hurricane  
Ida  
11/08/2009

# High-Resolution Cross-Track Winds



Hurricane  
Ida  
11/08/2009

# High-Resolution Cross-Track Winds

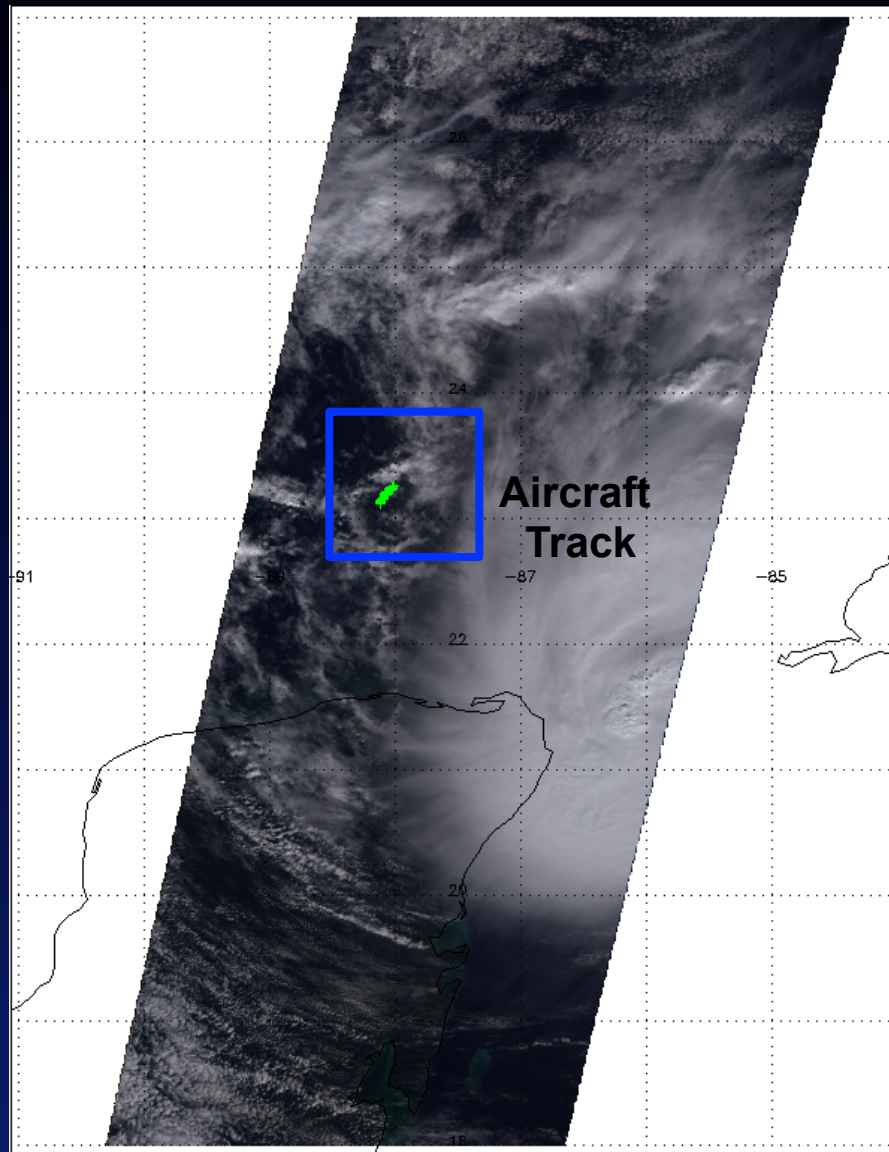


Hurricane  
Ida  
11/08/2009

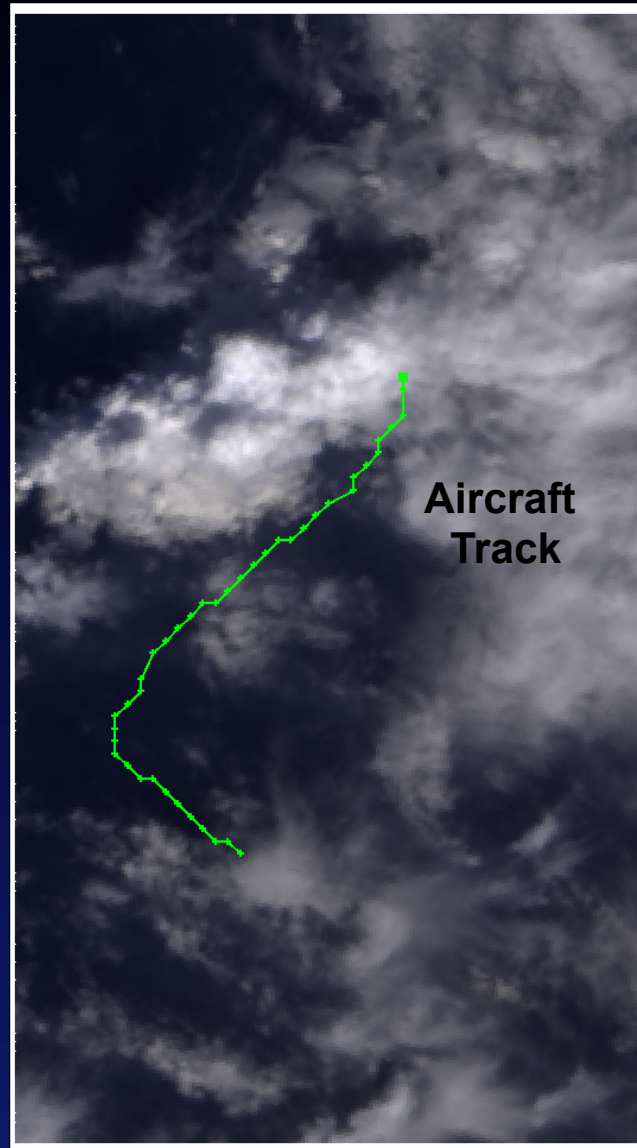
Size of feature and large divergence at cloud top suggest the presence of a vortical hot tower in the eyewall of the hurricane



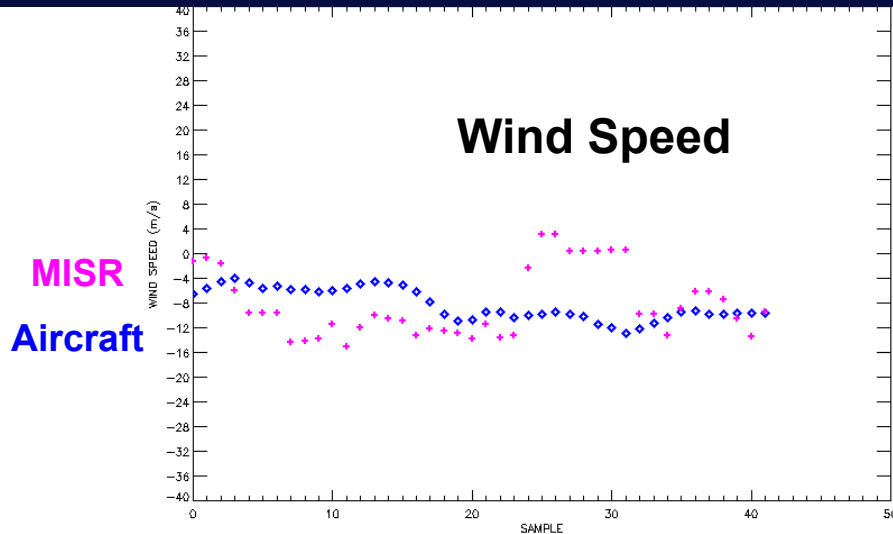
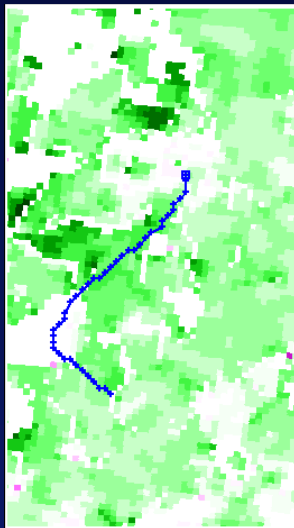
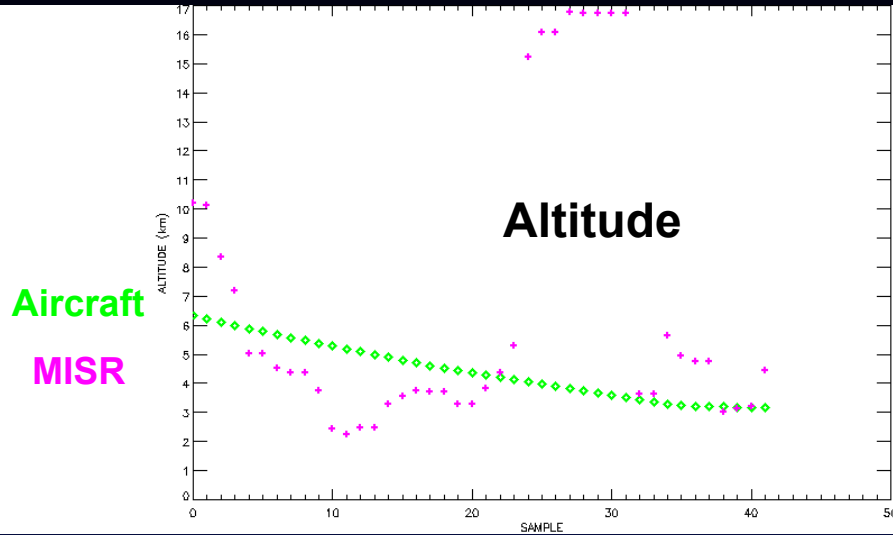
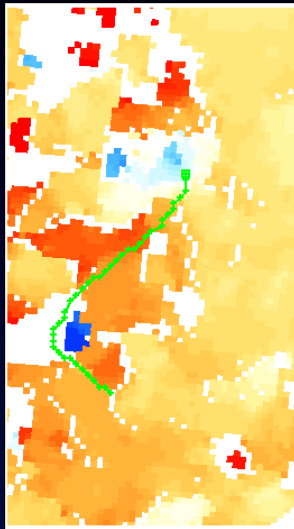
# Hurricane Ida – 2009 in situ Comparison



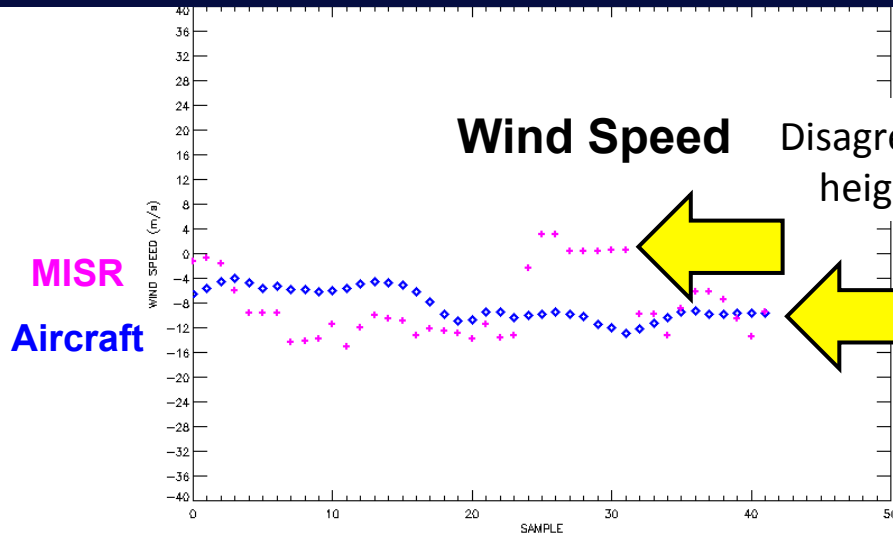
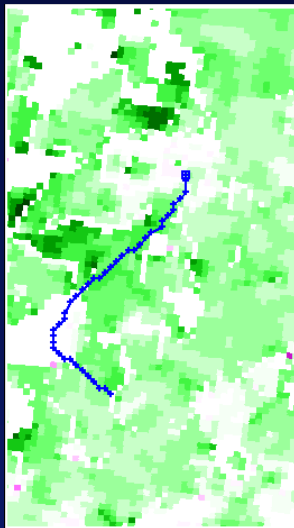
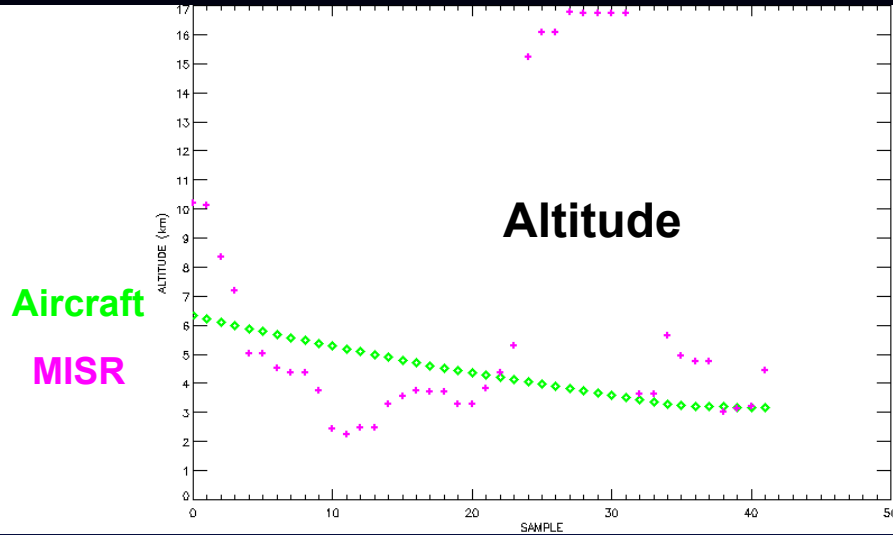
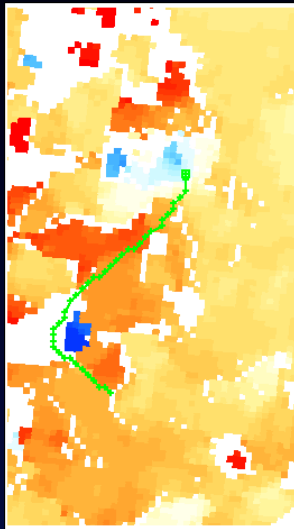
# Hurricane Ida – 2009 in situ Comparison



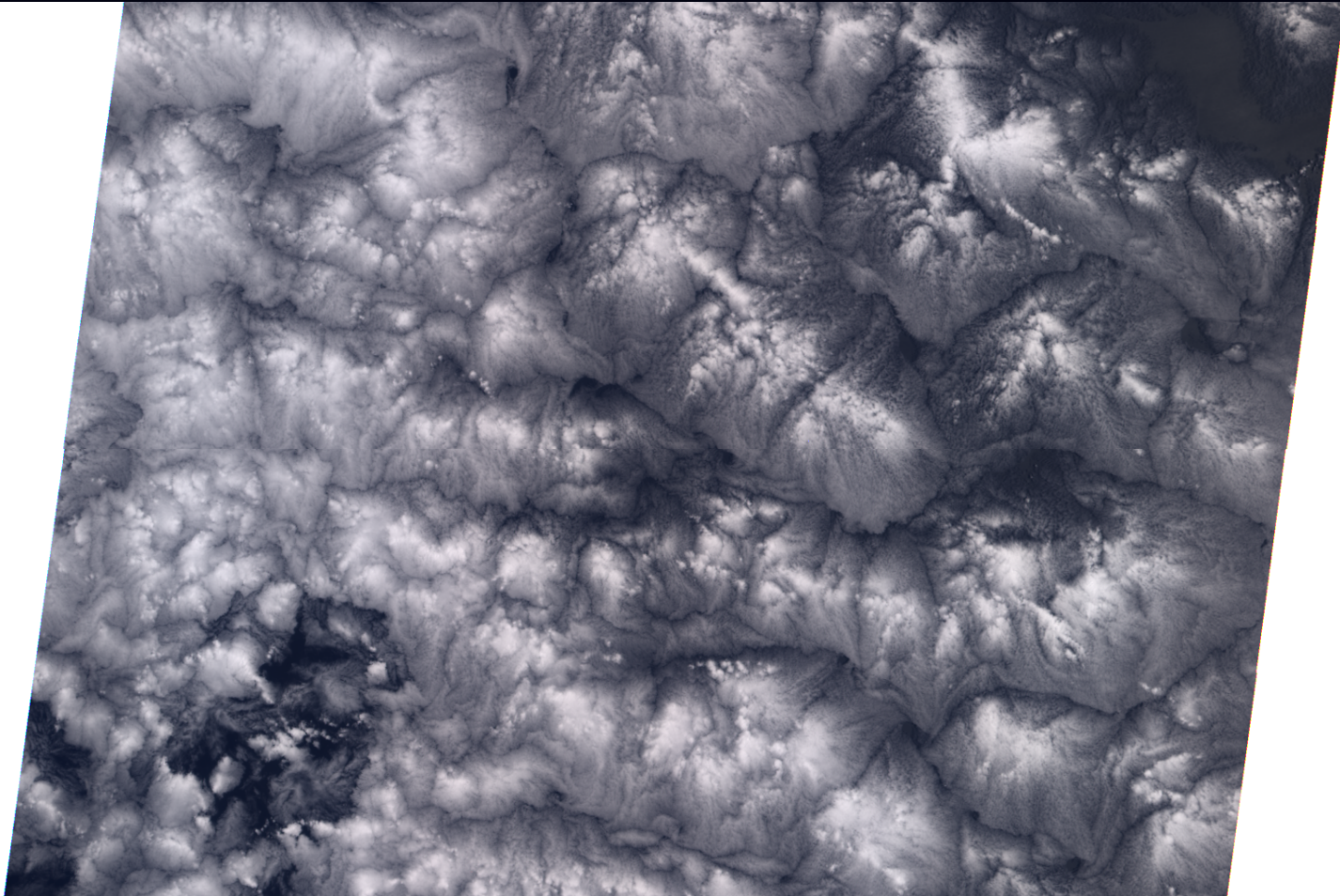
# Hurricane Ida – 2009 in situ Comparison



# Hurricane Ida – 2009 in situ Comparison

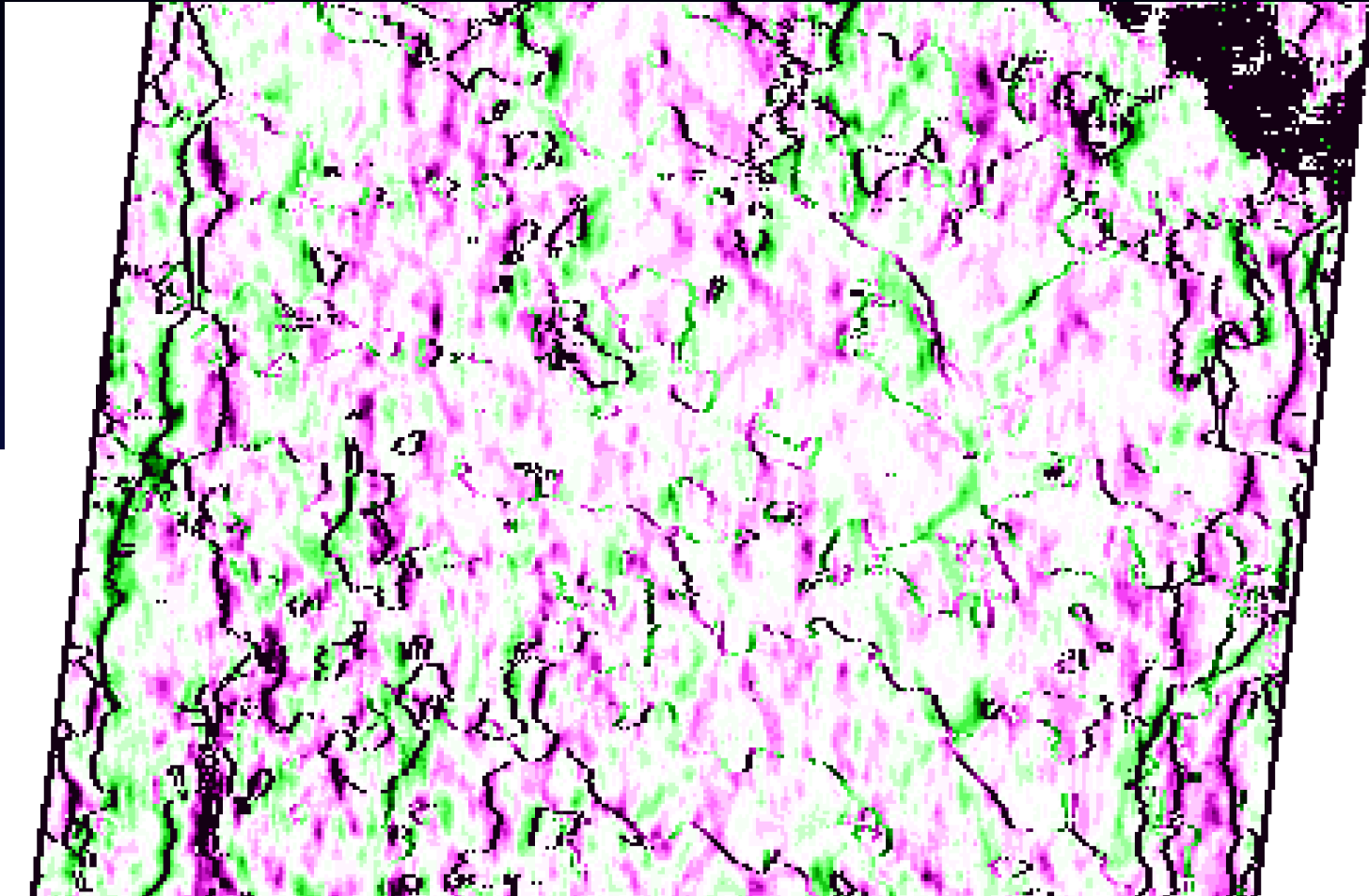


# Stratocumulus Cloud-Top Divergence

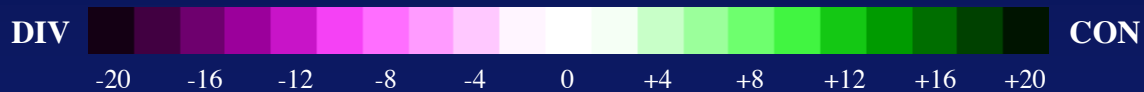


MISR Orbit 47143, Path 11, Blocks 100-101  
28 October 2008

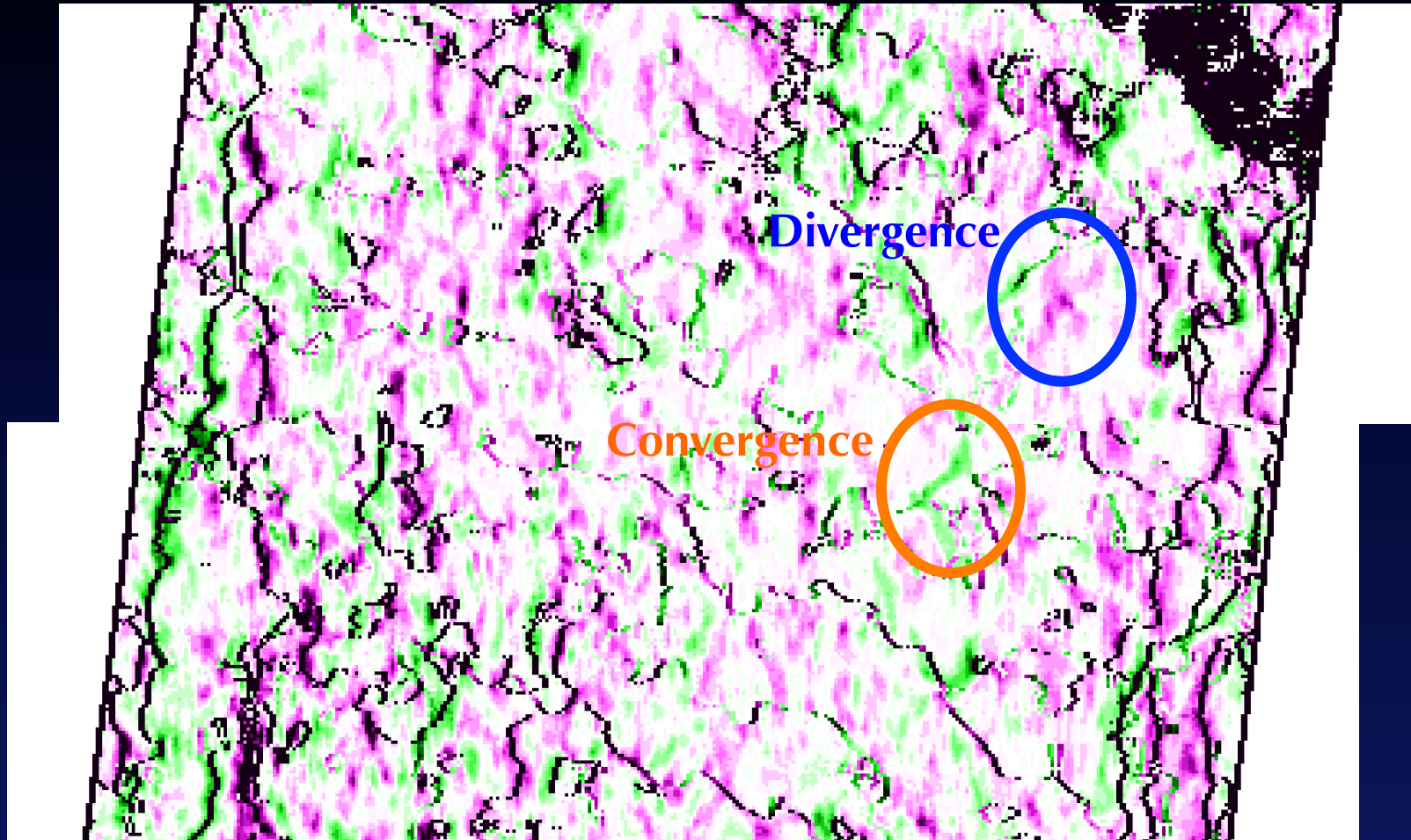
# Stratocumulus Cloud-Top Divergence



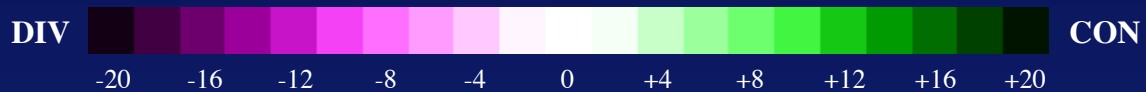
Linear Convergence  
 $1 \times 10^{-5} \text{ s}^{-1}$



# Stratocumulus Cloud-Top Divergence



Linear Convergence  
 $1 \times 10^{-5} \text{ s}^{-1}$



# Summary

- MISR Details
  - Data from February 2000 to present
  - Polar orbit, 10:30 a.m. equator crossing (descending)
  - 400 km swath width
  - 9 cameras at fixed viewing angles ( $\pm 70.4^\circ$ ,  $\pm 60^\circ$ ,  $\pm 45.6^\circ$ ,  $\pm 26.1^\circ$ ,  $0^\circ$ )
  - 275 m resolution red band (all bands nadir)
  - 1.1 km resolution other bands off nadir
- Current Cloud Products
  - Cloud-top heights 1.1 km horizontal, 500 m vertical
  - Cloud motion vectors 70.4 km horizontal, 500 m vertical
- New Cloud Products (Currently Testing)
  - Cloud-top heights 1.1 km horizontal, < 500 m vertical
  - Cross-track cloud motion 1.1 km horizontal, < 500 m vertical
  - Cloud motion vectors 17.6 km horizontal, < 550 m vertical