

# Convective Structure in Relation to Shear

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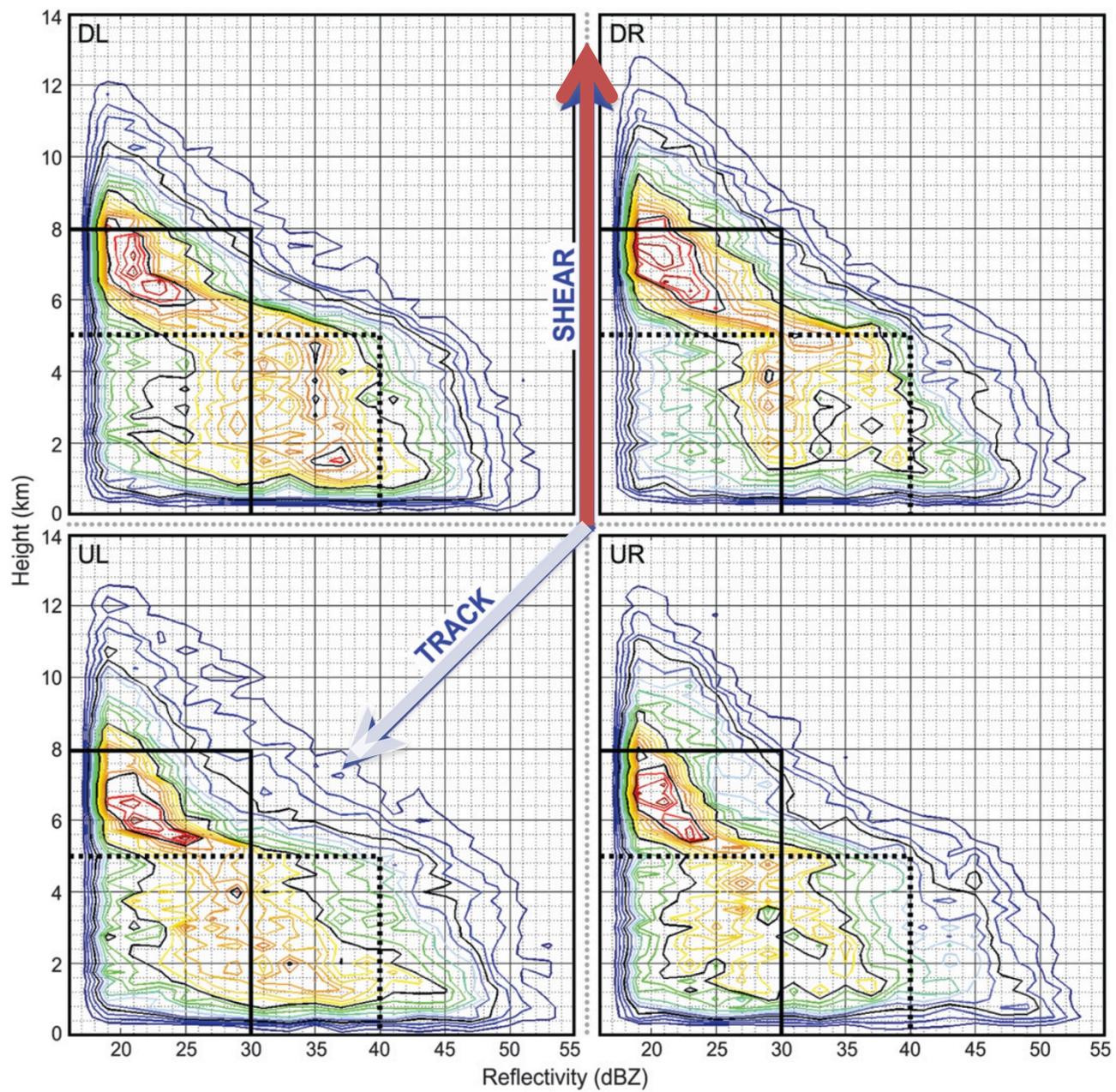


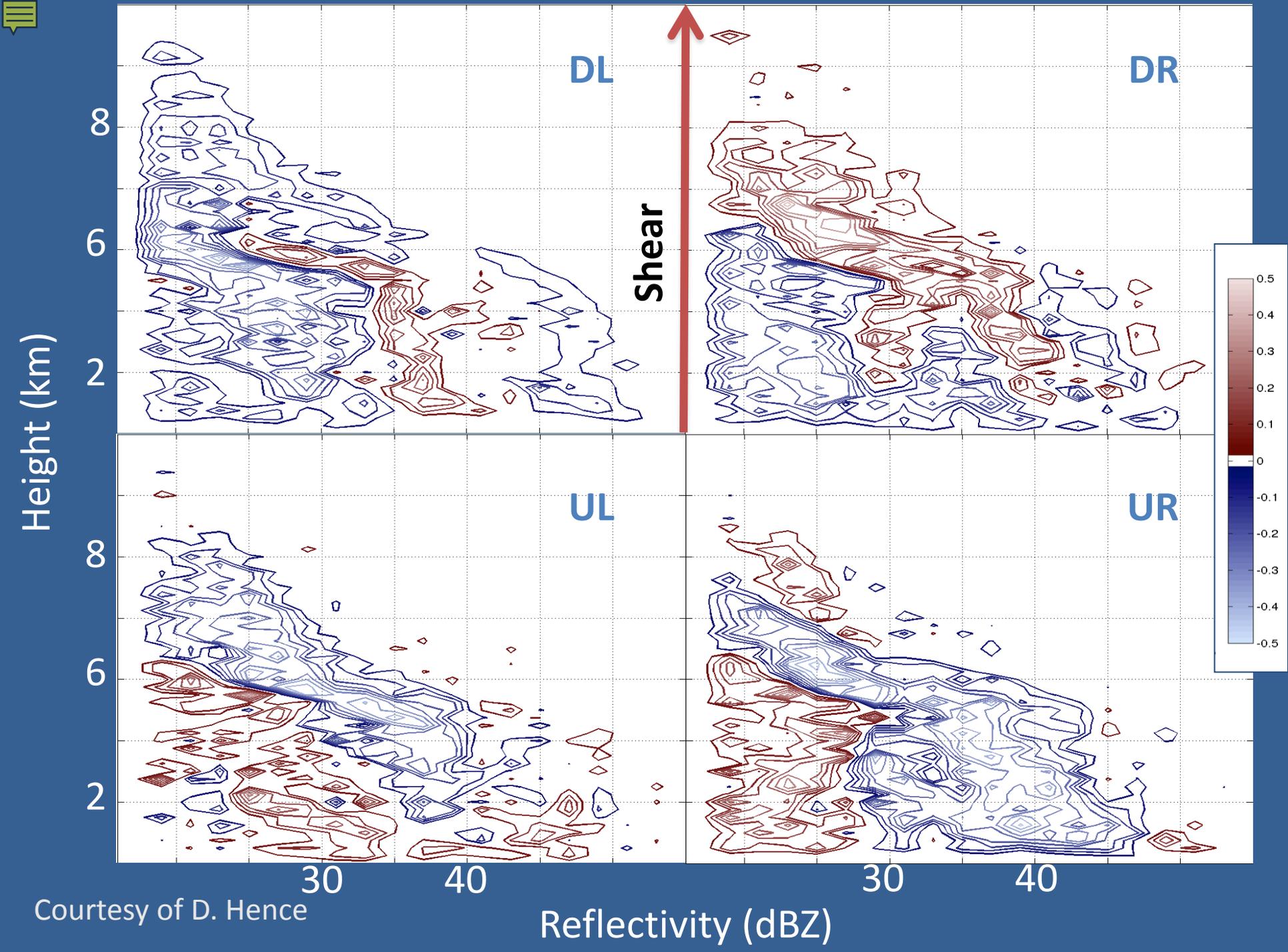
# Hence and Houze (2011,2012a,b) have analyzed TRMM PR data

- Snapshots of radar reflectivity
- 10+ years of data
- Contoured by Frequency Altitude Diagrams (CFADs)
- Found evidence of systematic evolution of convective development around the storm
- Relative to the 200-850 hPa shear vector



TRMM



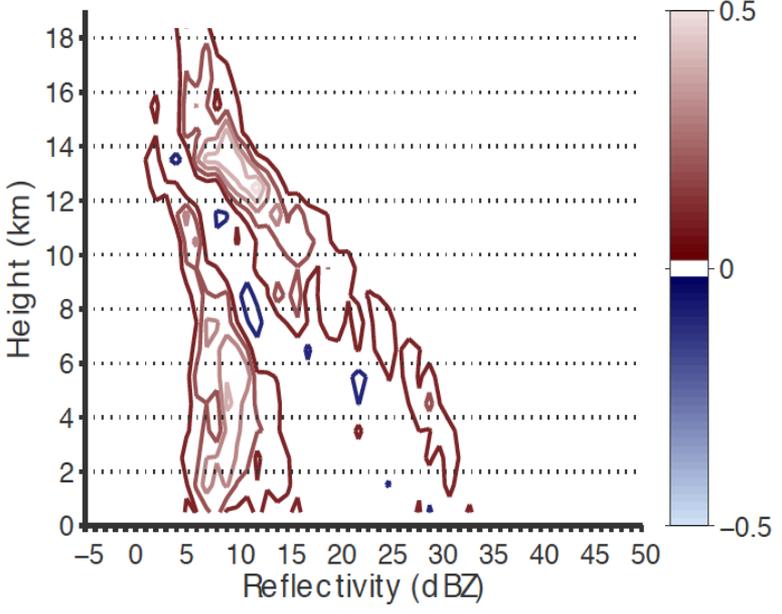




Hurricane Katrina – 8/28/2005



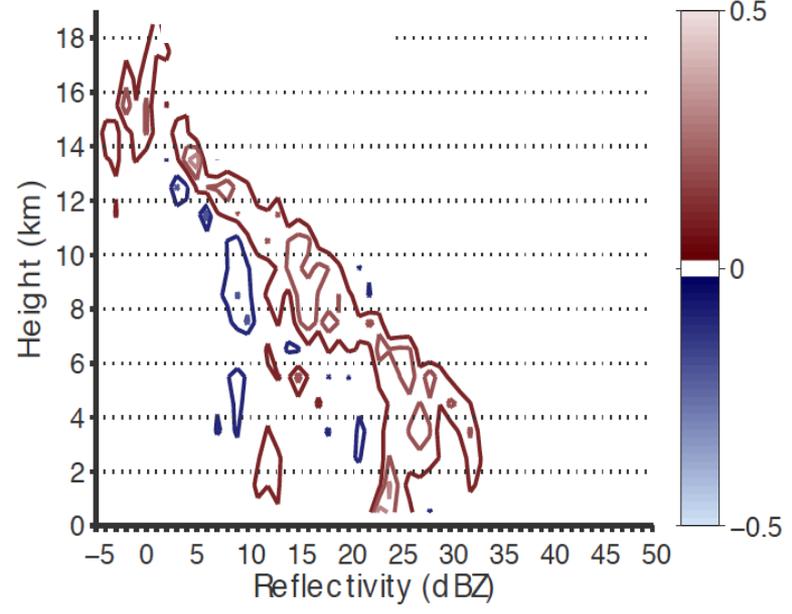
**DL**



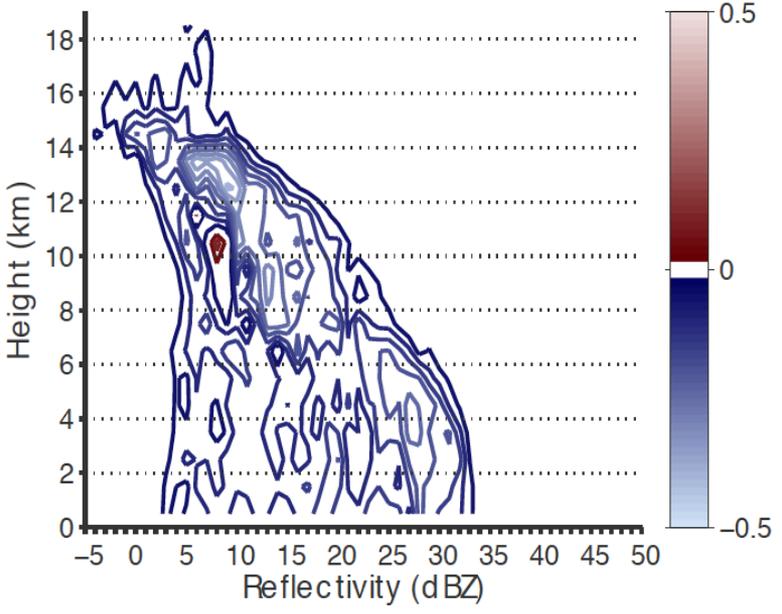
**Shear**



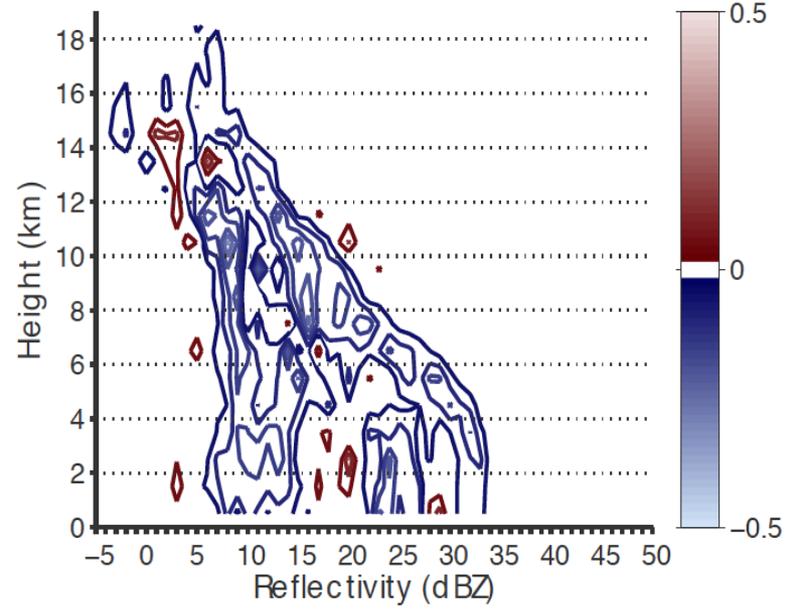
**DR**



**UL**



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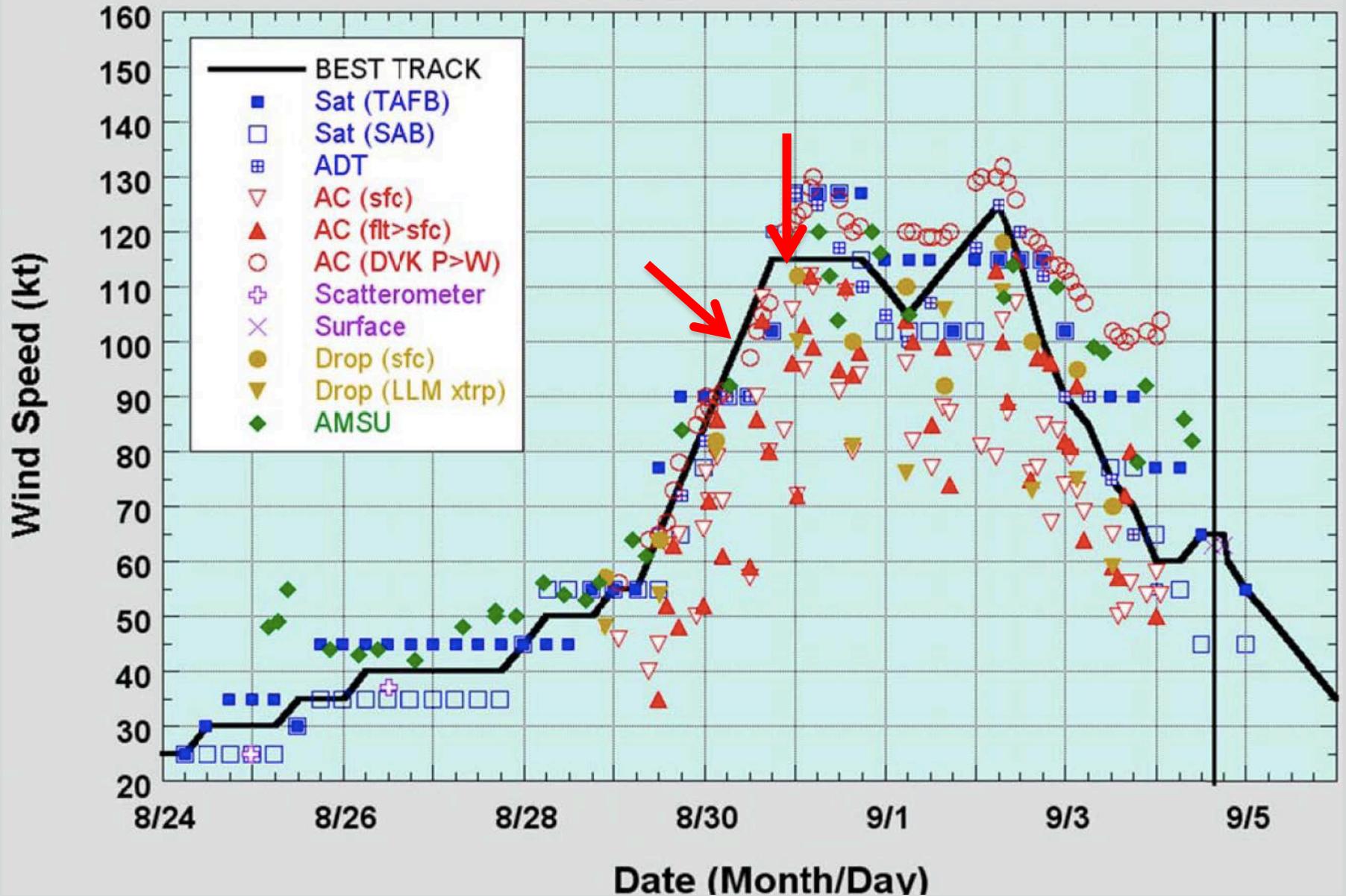




# NOAA P3 Flights in Hurricane Earl

# Hurricane Earl

25 August - 4 September 2010





Hurricane Earl AFTER RI  
8/30/2010  
N43, 2100-2330Z



**DL**

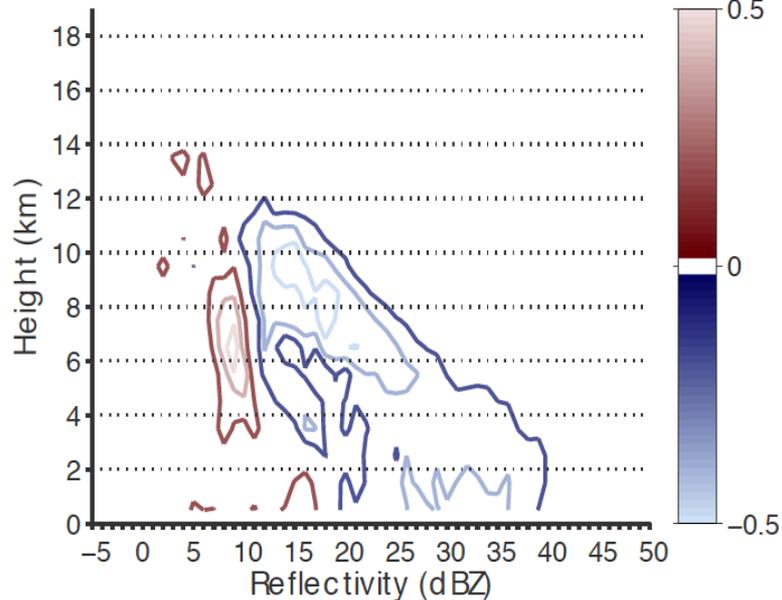
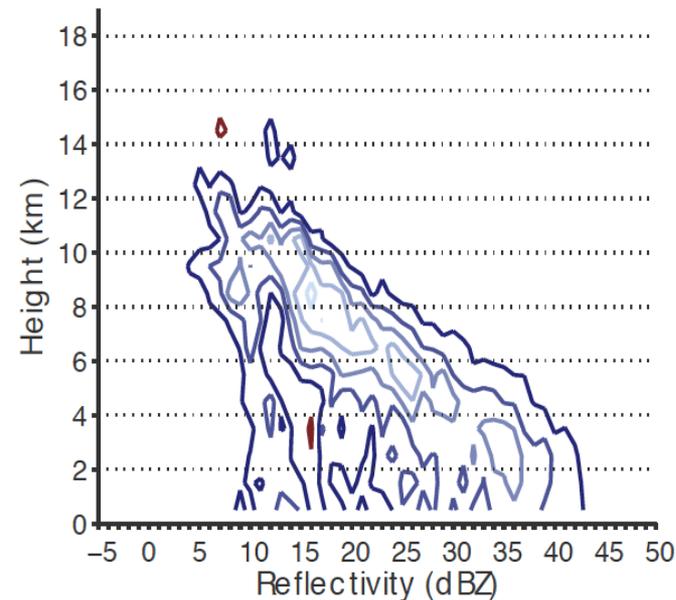
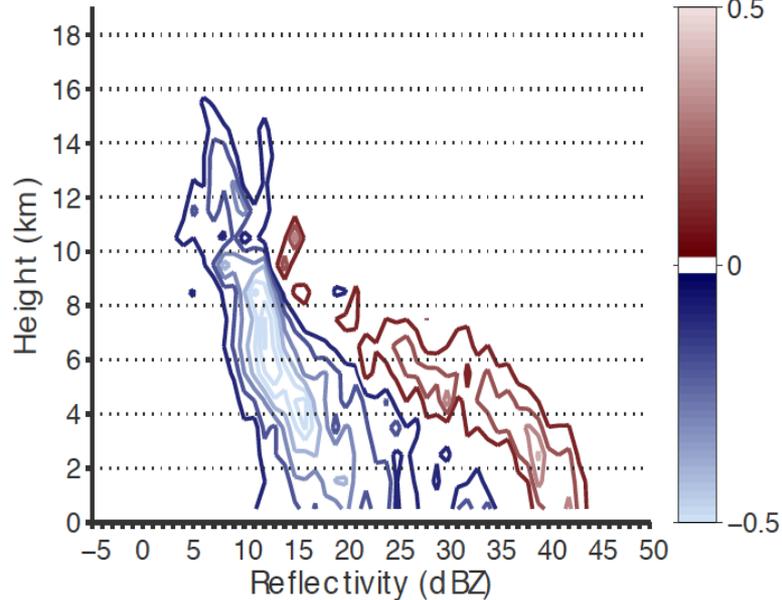
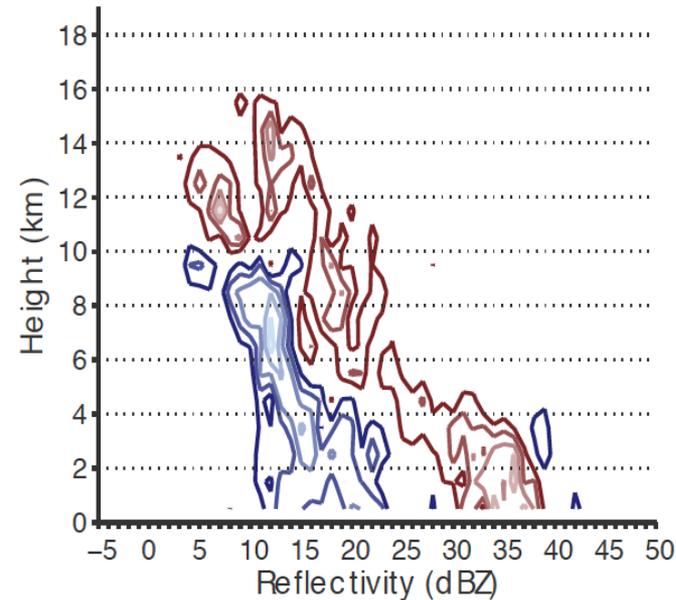
**DR**

**Shear**

Earl after RI

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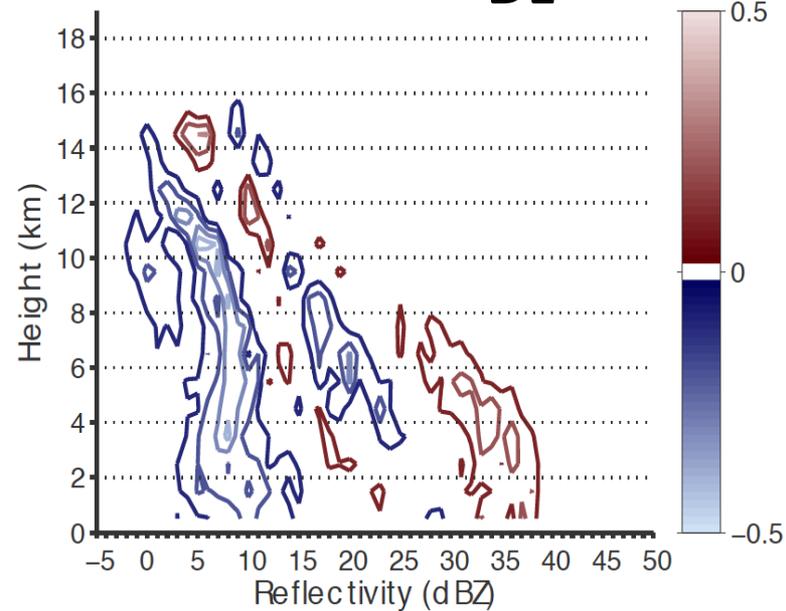




Hurricane Earl DURING RI  
8/30/2010  
NPAA 42, 1100-1400 UTC



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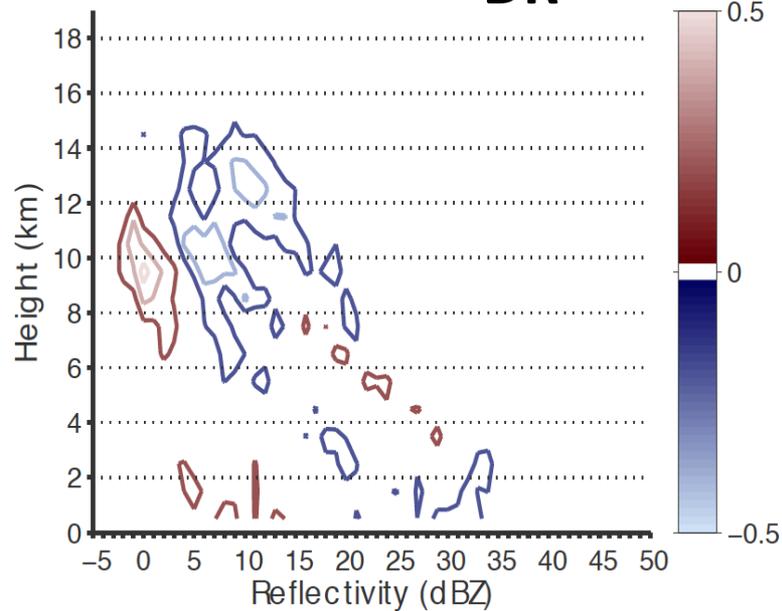


**Shear**

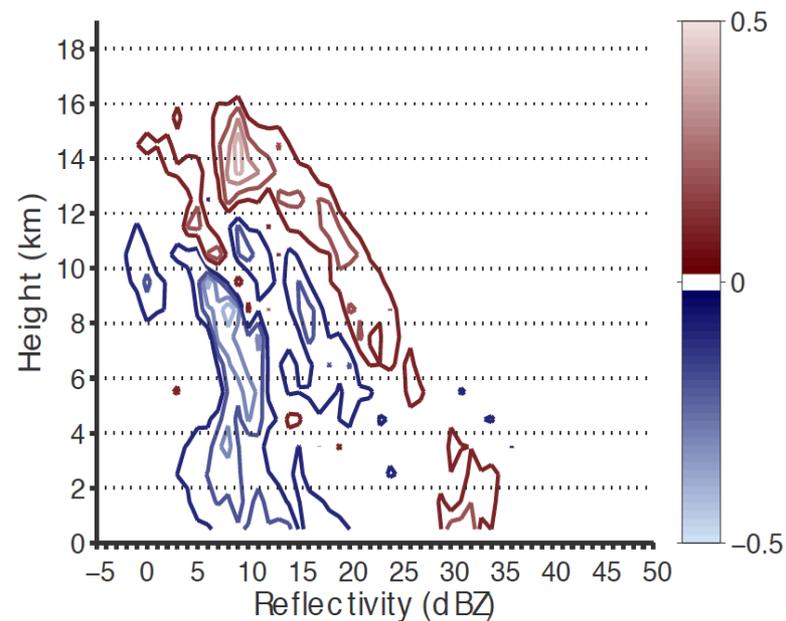


Earl during RI

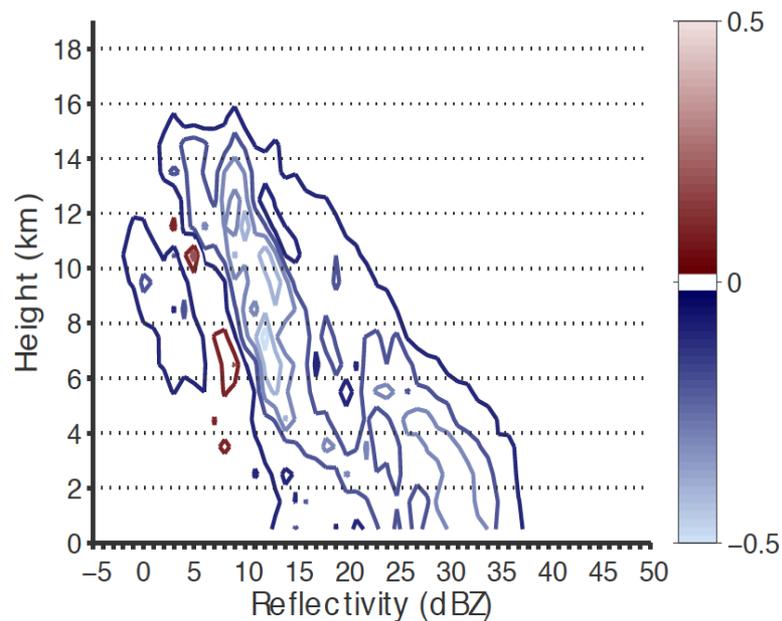
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# Conclusions

- Had to use NOAA P3 radar data to get enough statistics
- TRMM shows convective generation in downshear right and lifecycle behavior in the subsequent quadrants
- Katrina looks generally consistent with the TRMM statistics.
- When Earl was rapidly intensifying the pattern shifted by one quadrant—is this significant?

# End

This research was supported by NSF grant # ATM-0743180 and NASA grant #NNX09AM73G