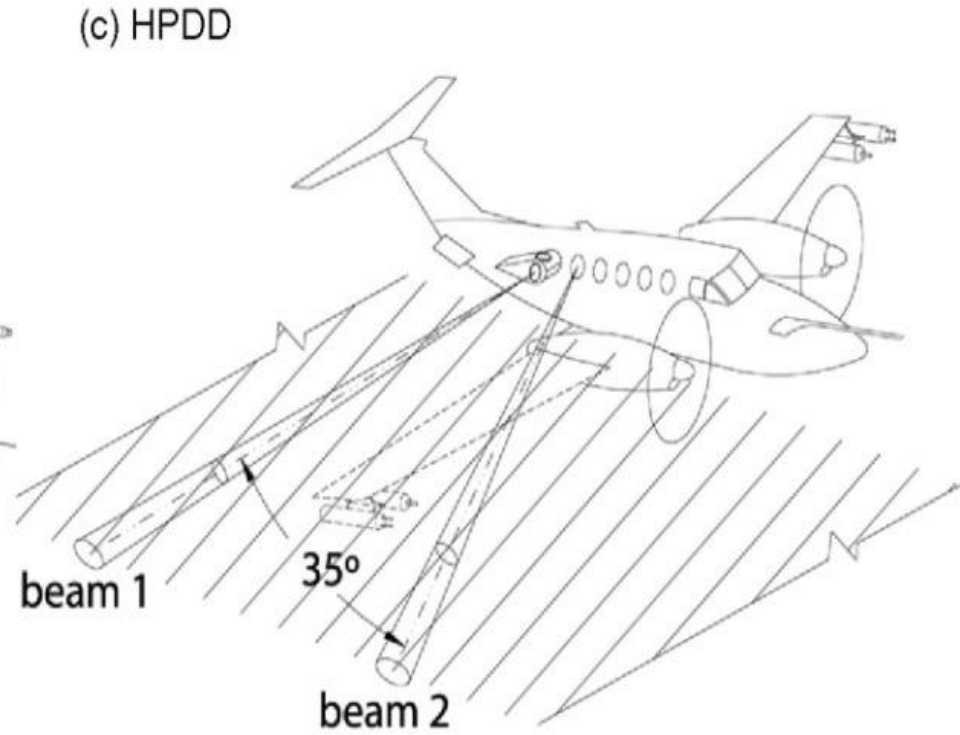
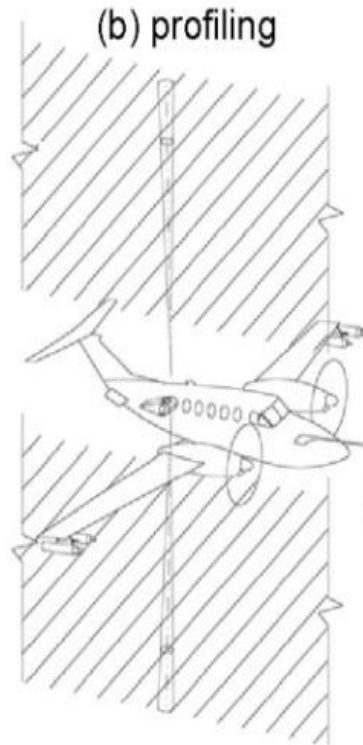
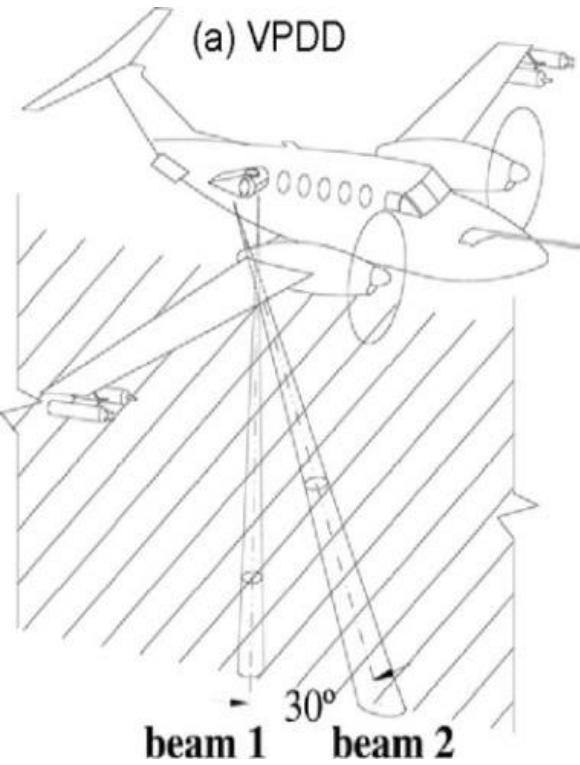


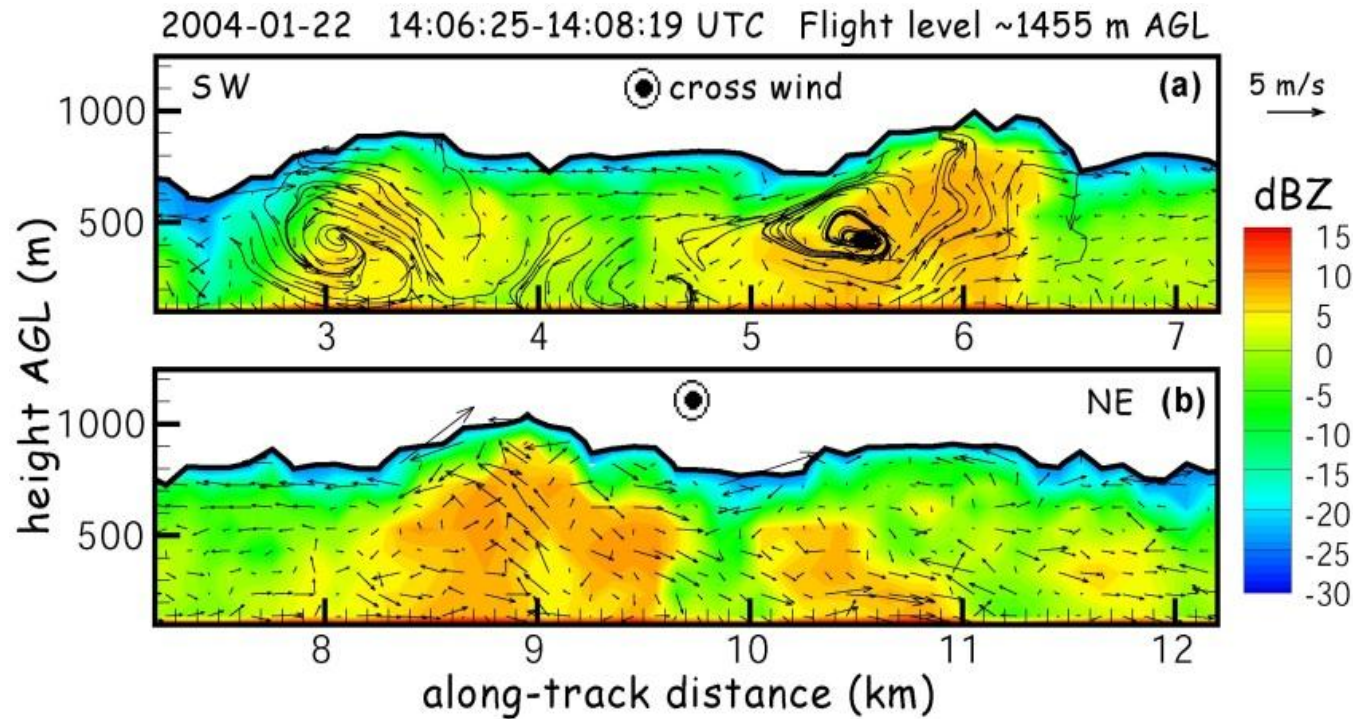
UWKA observations in OWLeS

= Bart Geerts
University of Wyoming

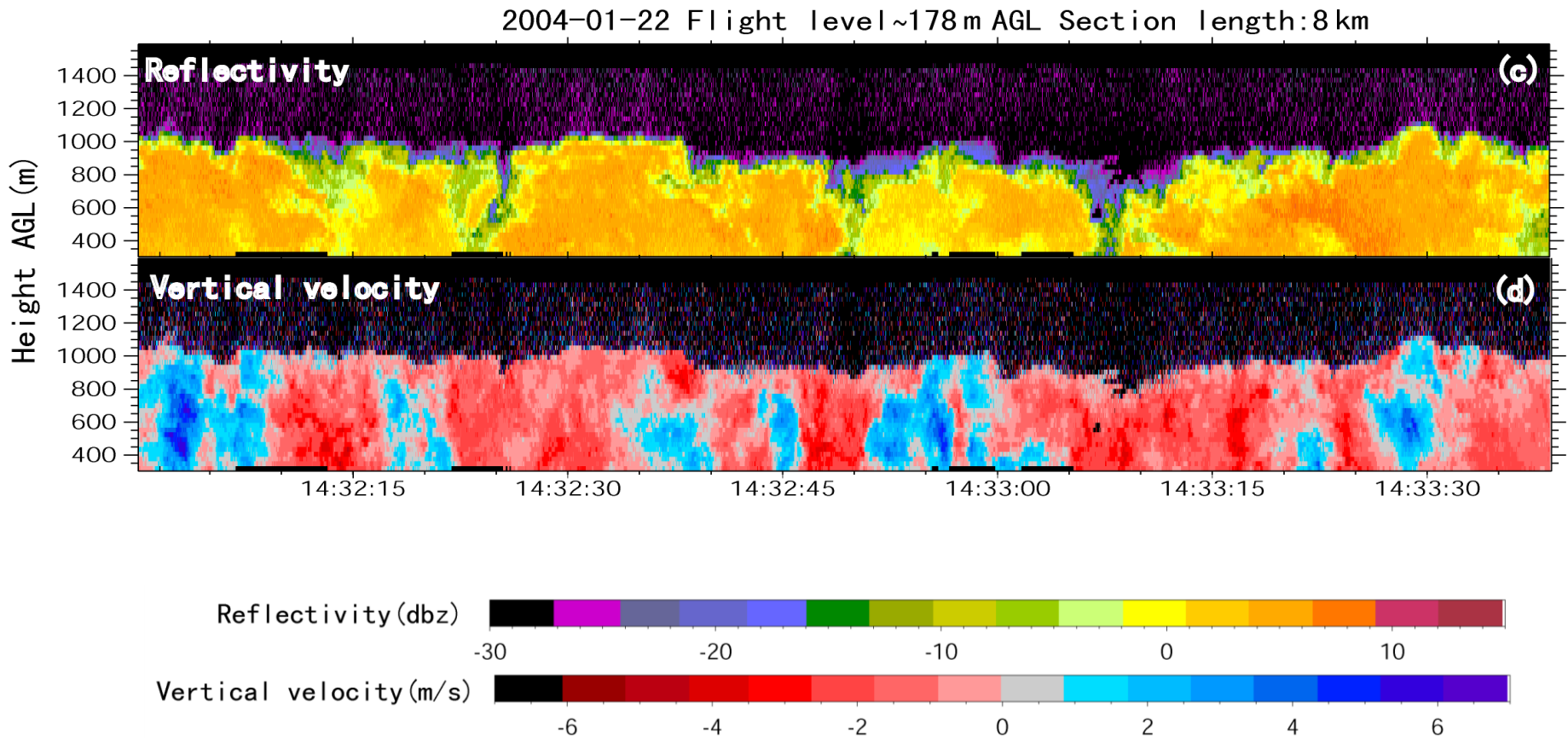
Cloud Radar



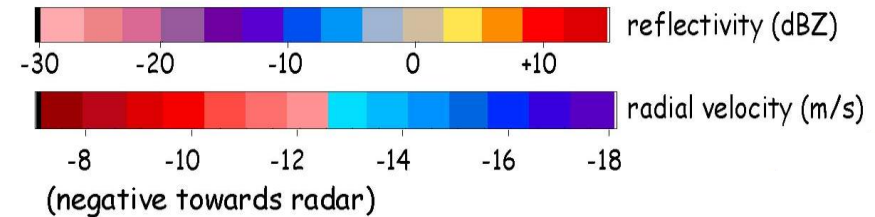
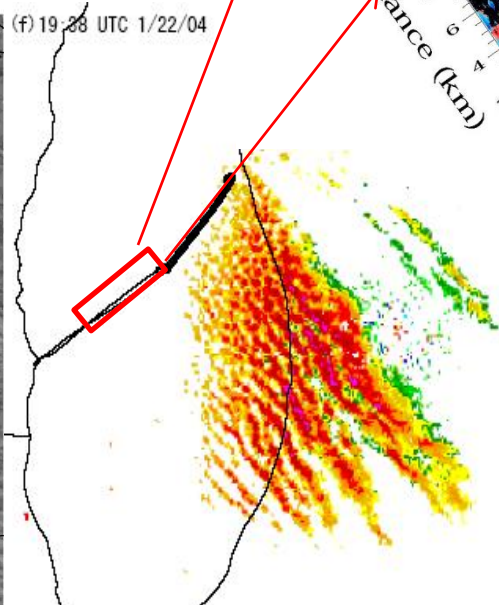
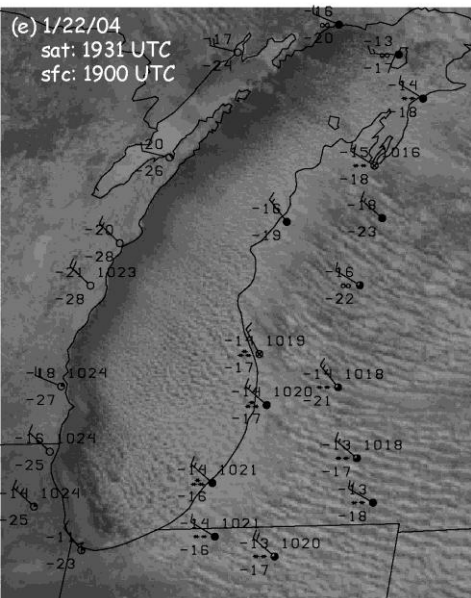
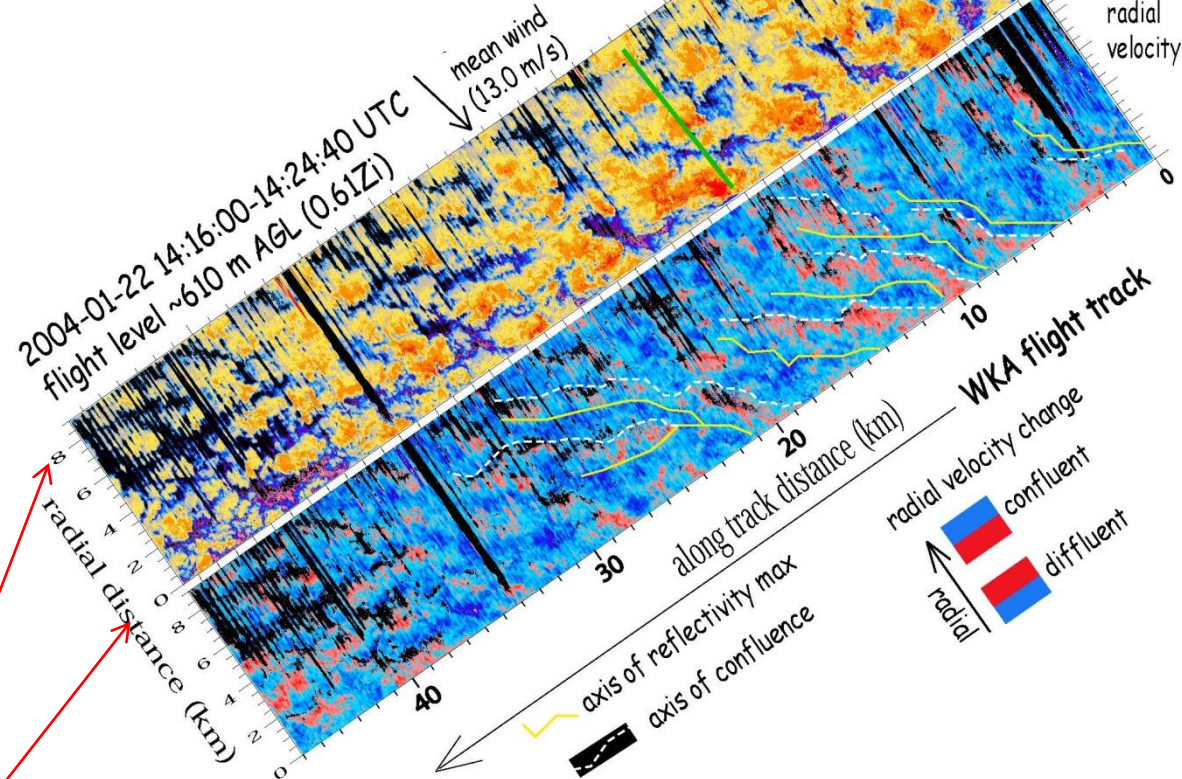
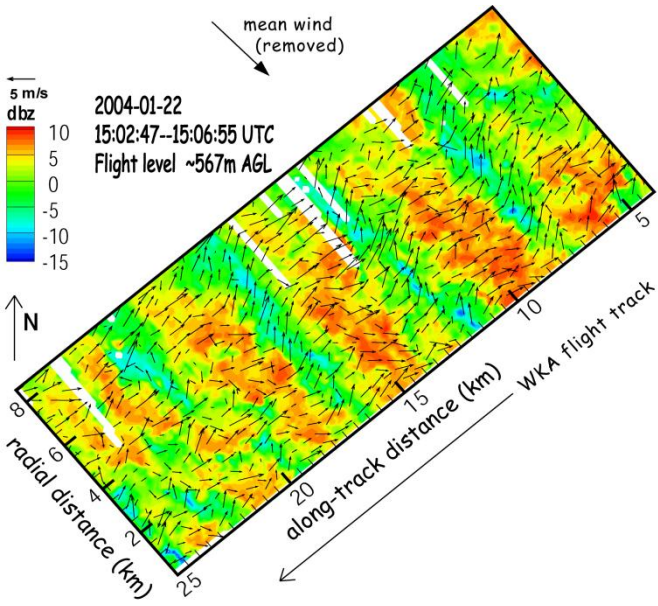
VPDD: example



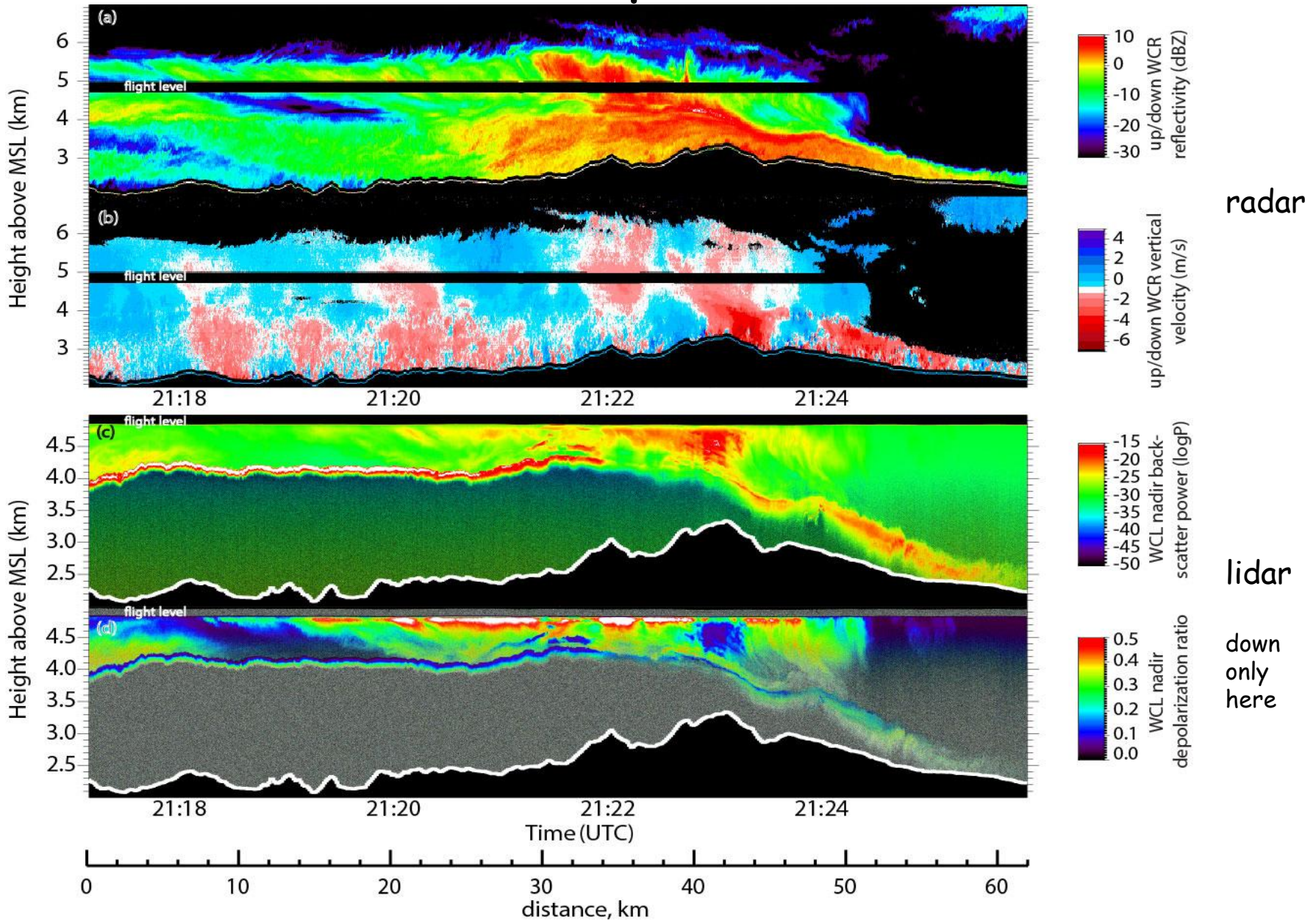
profiling: example



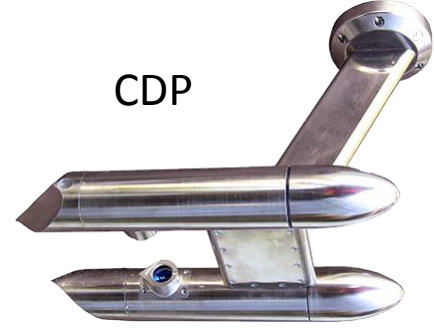
HPDD: example



Cloud lidar (up and down)



King Air in situ instruments



CDP

with ice shattering avoidance tip



UW King Air



gust probe



PCASP

CIP



FSSP

2DP

King Air in situ instruments

- Licor 6262 (or 7500): water vapor & CO_2 fluxes
- Hemispheric Pyranometer & Pyrgeometer (up & down)
 - Note: no Heiman IR temperature probe
- Downward time lapse photography (1 frame/sec)
- Liquid water: DMT LWC-100 (hot wire LWC), Gerber (droplet surface area & volume), FSSP, and CDP
- PCASP: the only aerosol probe, and its data can serve as a first surrogate for both CCN and IN concentrations

airframe & instrument icing

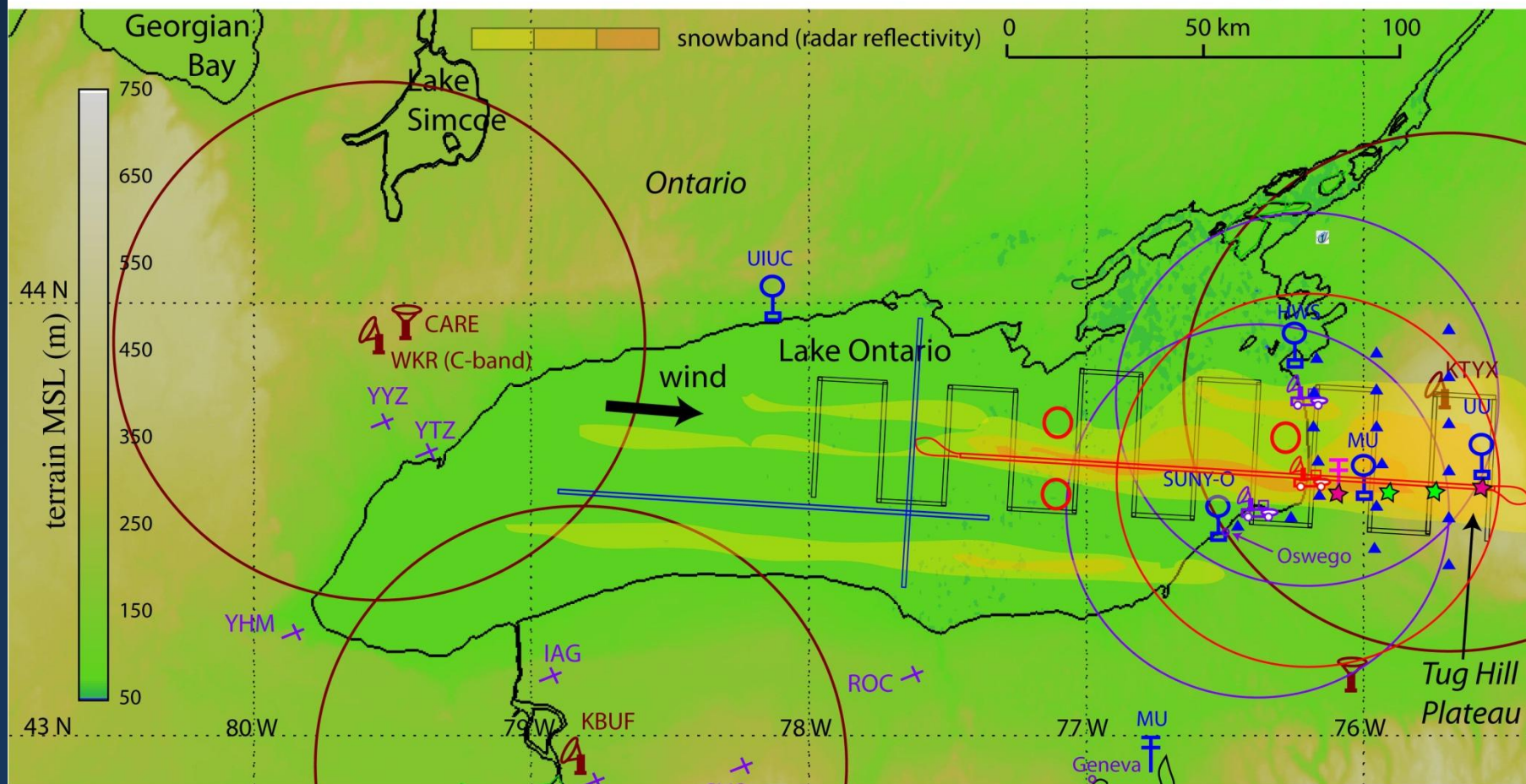
Icing on the instruments



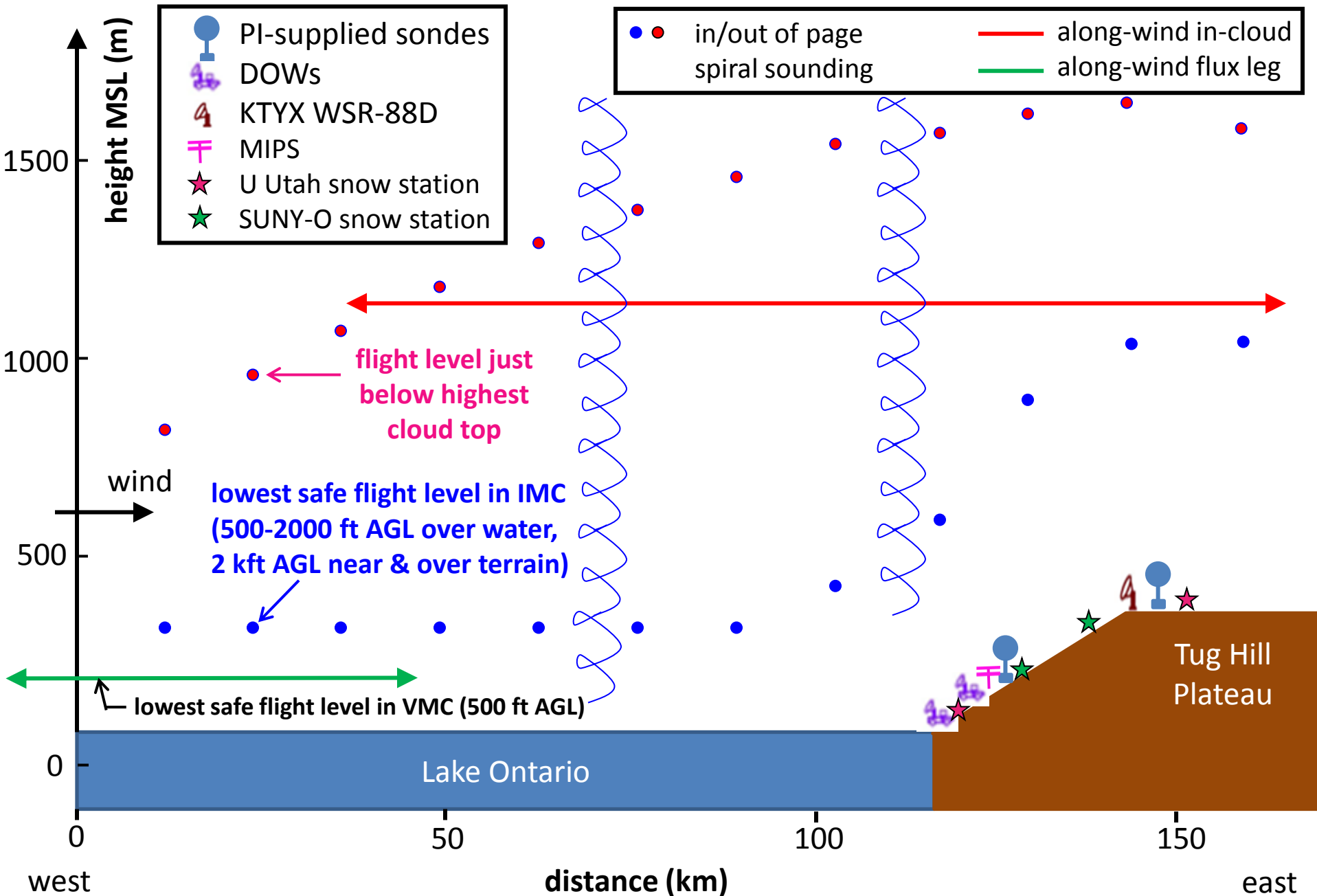
OWLeS experimental design: long-fetch bands

Westerly Winds, bands along the long axis of Lake Ontario

- | | | |
|--|--|---|
| University of Wyoming King Air tracks | Millersville University Profiling System | dual-pol DOW & 50 km range ring |
| across-band legs (LL & cloud top) | Mobile Alabama Profiling System (MIPS) | rapid-scan DOW & 50 km range ring |
| flux legs (near sfc, prefer across-wind) | PI-supplied radiosonde system (with ID) | S- or C-band dual-pol radars & 70 km range ring |
| along-wind leg (1.0-1.5 km MSL) | airports (with ID) | DOW weather pods |
| profiling spirals (sfc to >cloud top) | "snow sites" | 915 MHz wind profiler |



Schematic vertical cross-section for long-fetch LeS



UW science interests

- WCR 2D kinematics & snowband dynamics
- WCR, WCL, *in situ* probes & snow growth mechanisms
- WSR-88D dual-pol particle ID & QPE
- Large Eddy Simulations of snowbands (dynamics & QPF)