The CSU-CHILL Radar Facility and its Educational Opportunities

Pat Kennedy

Dual-polarization S-Band system funded by the NSF, operated by CSU and based at Greeley, CO.

Air-supported radome and dual transmitter electronics trailer are shown here.



Operations trailer



Offset feed antenna installed in spring 2008. Design provides improved cross-pol isolation and reduced sidelobe levels. Main reflector diameter is 8.5 m; 3 dB beam width is 1.0 degrees.



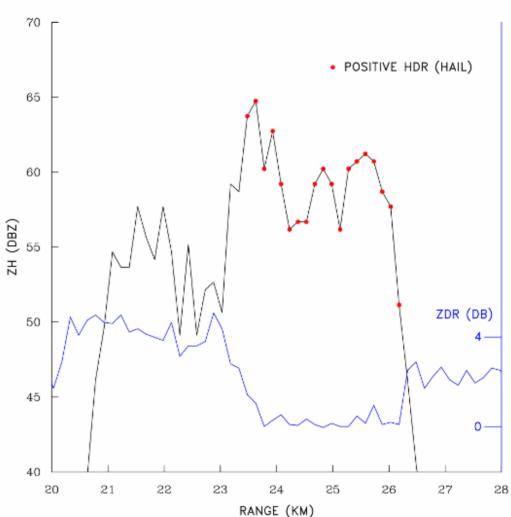
### Switch to web cameras and VCHILL

# ASCII gate data from a single ray

File Plot AScope Numerical Colors	Maps Help
Connections Bookmarks	Reflectivity (dBZ) Plot
🗋 05 DIR	Reflectivity Plot Type : dBZ
📮 07 DIR	20 70.0
08 DIR 10 DIR	65.0
11 DIR	60.0
🗅 16 DIR	55.0
17 DIR 18 DIR	50.0
	40.0
20 DIR	35.0
□ 21 DIR ▷ □ CHL20080621 000411 test rhi	30.0
P	
CHL20080621 001707 zdrsur F	15.0
<ul> <li>CHL20080621 002216 zdrsur F</li> <li>CHL20080621 002725 zdrsur F</li> </ul>	
▶      CHL20080621 003241 zdrsect	
CHL20080621 003636 zdrsect	3.0
<ul> <li>CHL20080621 004031 zdrsect</li> <li>CHL20080621 004424 zdrsect</li> </ul>	
CHL20080621 004819 zdrsect	Radar : CSU-CHILL
<ul> <li>CHL20080621 005214 zdrsect</li> <li>CHL20080621 005447 vertVH</li> </ul>	Elevation : 2.0° Azimuth : 117.72°
<ul> <li>CHL20080621 005447 vertVH</li> <li>CHL20080621 005753 vertVH</li> </ul>	Date : Sat 21 jun 06 lime : 01.30 32 UT Gates : 1019x150m
CHL20080621 005854 vertVH	Gates : 1019x150m
<ul> <li>CHL20080621 010158 vertVH</li> <li>CHL20080621 010300 vertVH</li> </ul>	· x / Instan
P ■ CHL20080621 010500 vertVH	Marker: Elevation : 2.0* Azimuth : 160.67*
🕨 🖻 CHL20080621 010532 zdrsur F 💭	Azimuth : 160.67° Range : 35.3km
<ul> <li>CHL20080621 011041 zdrsur F</li> <li>CHL20080621 011451 test rhi</li> </ul>	Range : 35,3km Height : 2,66km (8,7 Value : N/A
CHL20080621 012126 test rhi	
<ul> <li>CHL20080621 012150 zdrsect</li> <li>CHL20080621 012401 zdrsect</li> </ul>	
<ul> <li>CHL20080621 012401 zdrsect</li> <li>CHL20080621 012612 zdrsect</li> </ul>	
CHL20080621 012823 zdrsect	range (km) dBZ NCP
P	range (kin) abz nei
Sweep 01	
Sweep 02	🛃 Reflectivity (rBZ) Numerical Dump
<ul> <li>CHL20080621 013034 zdrsect</li> <li>CHL20080621 013118 zdrsect</li> </ul>	023.550 059.2126 000.8898
CHL20080621 013202 zdrsect	023.700 056.1890 000.8780 023.850 056.6929 000.9134
🕨 🚊 CHL20080621 013246 zdrsect 🟹	024.000 058.7087 000.9331
	024 150 057.1969 000.8898 024.300 055.6850 000.8740
First Prev Next Last	024.450 056.6929 000.8819
	024.600 057.7008 000.8740 C 024.750 064.7559 000.9173
<pre> &lt; &lt;&lt; Step: 10</pre>	024.750 064.7559 000.9175
Mode: O Ray  Sweep O Volume	025.050 067.2756 000.9134
	025.200 066.7717 000.9291 025.350 067.7795 000.9173
dBZ V Min: -10.0 Max: 70.0	025.500 066.2677 000.9094
RHIVstretch: 1.00 RHI height: 12.0	025.650 063.7480 000.8976 025.800 062.2362 000.9488
Constinue (Inter) 20 Deserve (Inter) 20.2	025.950 057.1969 000.9173
Spacing (km): 20 Range (km): 20.2	026.100 049.6378 000.9213 026.250 043.0866 000.9173
Stop Apply / Replot	026.400 038.5512 000.9331
Create Bookmark	Reflectivity (dBZ) Plot
Basic Filters Advanced	Checking availability of NCP OK
	ances gevenesity of net a OK

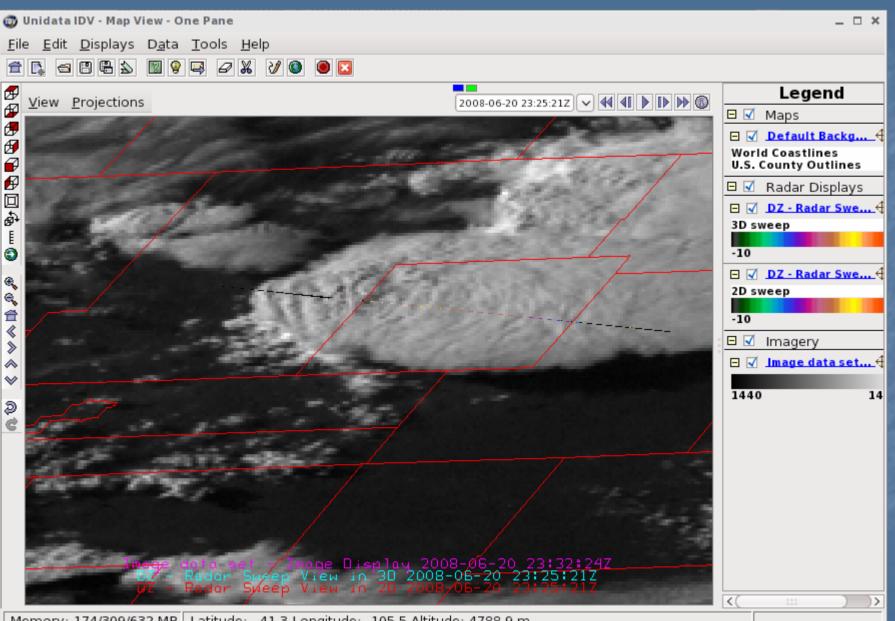
Basic radar data interaction for students:

Simple line graph and HDR calculation from 53 ASCII gate data values.



CSU-CHILL 012959 UTC 21 JUNE 2008 AZ=160.2 EL=1.48

#### GOES visible data in IDV: 2332:24 UTC 20 June 2008



Memory: 174/309/632 MB Latitude: 41.3 Longitude: -105.5 Altitude: 4788.9 m

#### CSU-CHILL RHI scan reflectivity data in IDV: 2325:21 UTC 20 June 2008

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	World Coastlines U.S. County Outlines
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	1440 14656
DZ - Radar Sweep View in 3D 2008-06-20 23:25:21Z DZ - Radar Sweep View in 2D 2008-06-20 23:25:21Z	
	<( :::: ))>
Memory: 168/312/632 MB   Latitude: 41.0 Longitude: -106.5 Altitude: 5867.8 m	

## Summary

CSU-CHILL is accessible beyond the traditional field experiment mode. Internet / VCHILL capabilities can bring the radar into the classroom. Facility has expanding inventory of archive data, featured articles, etc. Please see chill.colostate.edu web site.