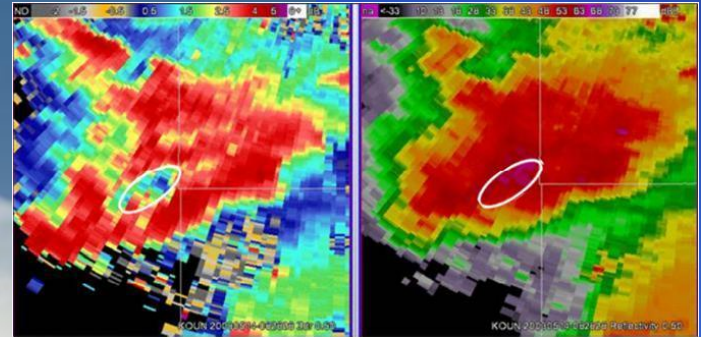
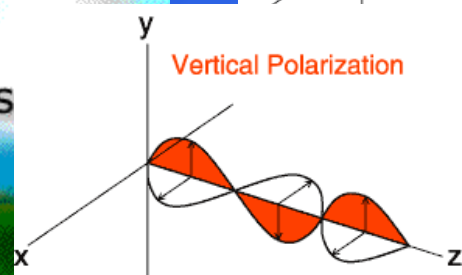
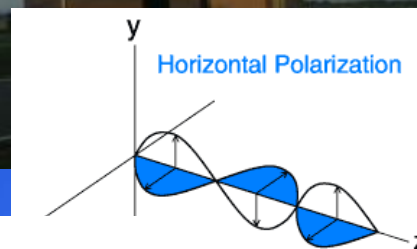
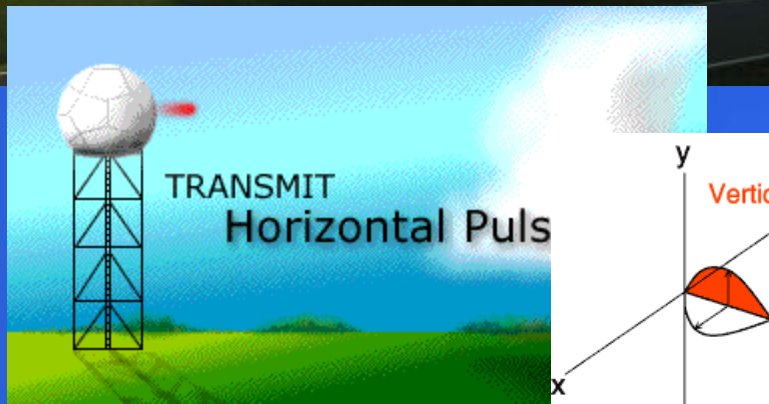


Operational use of Dual Polarization



By
Bradley Ketcham
Chris Jakub
Wichita, KS



Case Study Events

April 3rd, 2011 Large Hail Winfield, KS

**April 9th, 2011 Large Hail/TBSS
Stafford County**

June 9th, 2011 Large Hail Wichita, KS

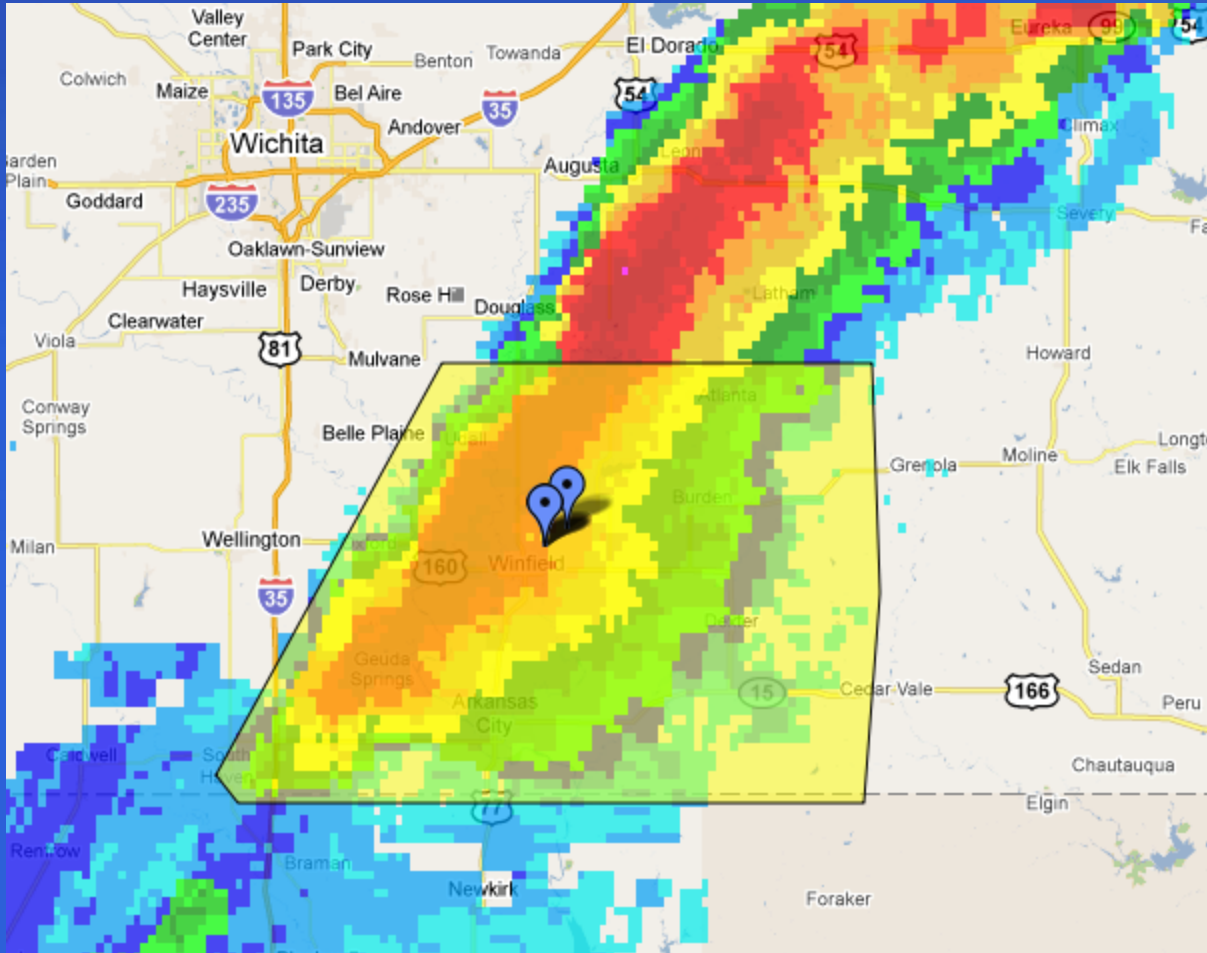
April 3rd 2011

Winfield, KS

Large Hail

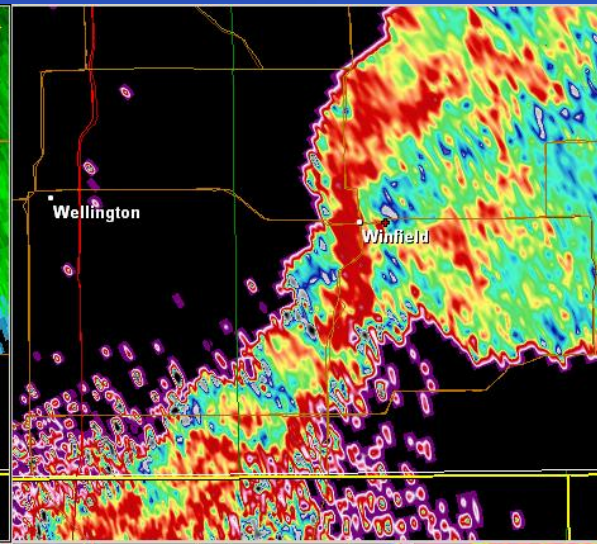
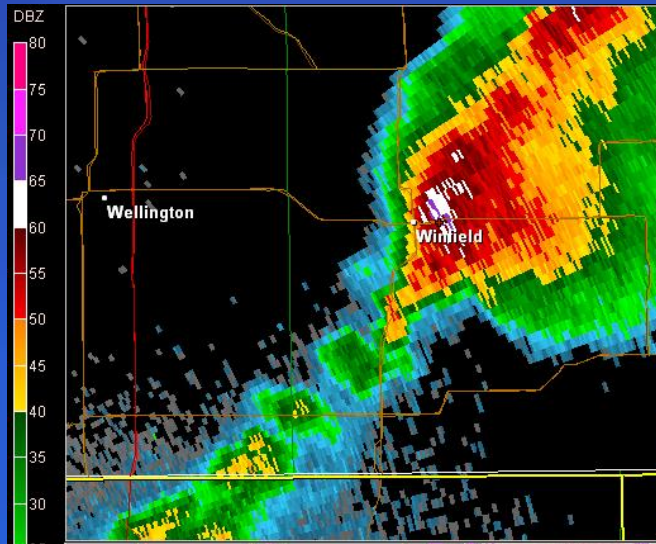


April 3rd 2011, Winfield, KS



Large Hail Reports

April 3rd 2011, Winfield, KS Large Hail



Site: KVNK
 VST: 04/04/2011 02:45:04 Z
 Prod: 04/04/2011 02:45:01 Z
 VCP: 11 SMV: ----
 Tilt: 0.538°

Select Product:

BB VIL ZDR
 BV VIL0 RHQ
 SRV EOSH PHI
 SW MEHS KDP
 ET NROI HCA

Select Tilt:

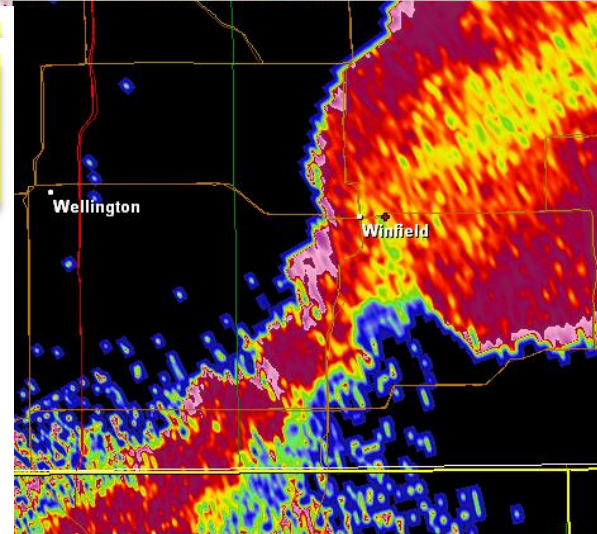
0.5° 1.5° 2.4° 3.4°
 4.4° 5.4° 6.2° 7.5°
 8.8° 10.0° 12.0° 14.1°
 16.7° 19.5°

Warnings:

Flash Flood - 0
 Thunderstorm - 0
 Tornado - 0

Product Details:

Max: 68.5 dbz
 Az: 54.8°
 Ran: 127.9 nm



SEVERE THUNDERSTORM WARNING

KSC035-040330-
 /O.COM.KICT.SV.W.0032.000000T00002-110404T0330Z/
 COWLEY KS-
 943 PM CDT SUN APR 3 2011

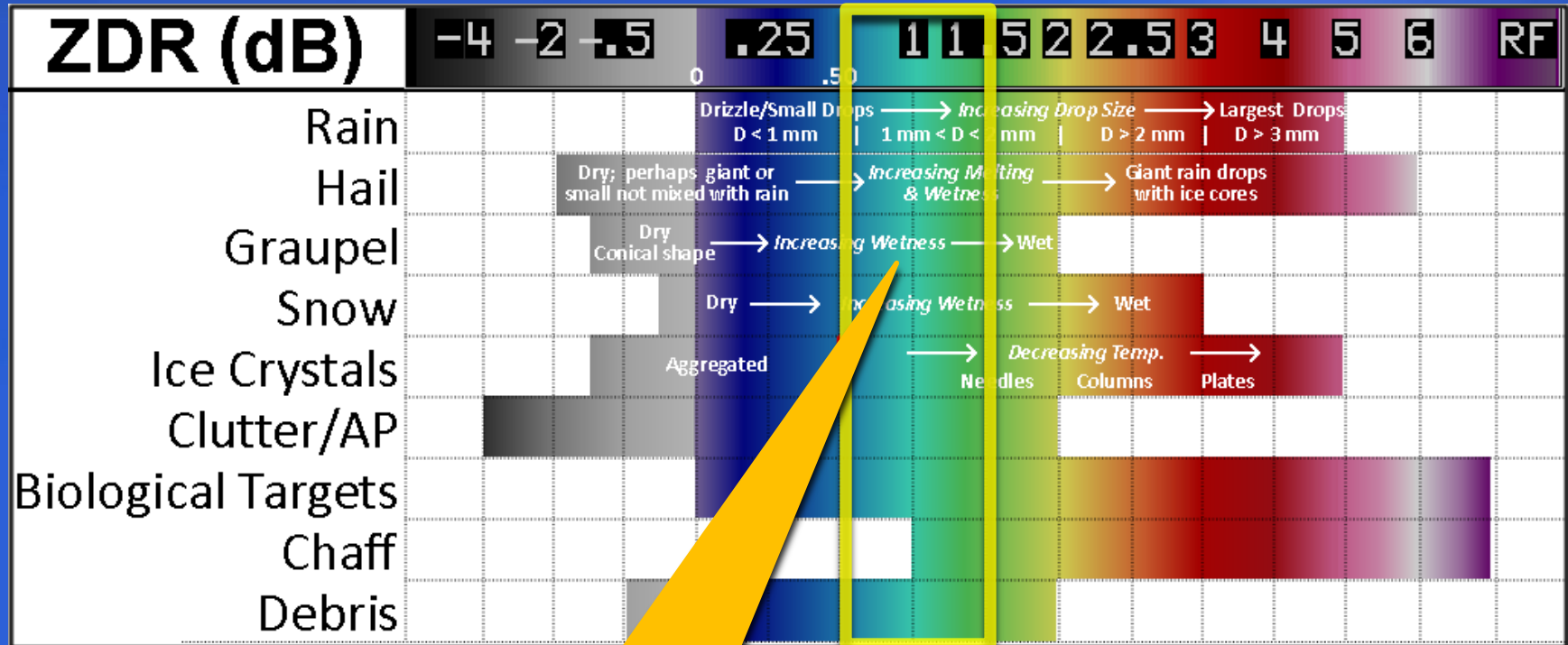
**Updated
 SVS**

...A SEVERE THUNDERSTORM WARNING REMAINS IN EFFECT FOR COWLEY COUNTY UNTIL 1030 PM CDT...

AT 940 PM CDT...NATIONAL WEATHER SERVICE METEOROLOGISTS WERE TRACKING A LINE OF SEVERE THUNDERSTORMS CAPABLE OF PRODUCING PING PONG BALL SIZE HAIL...AND DESTRUCTIVE WINDS IN EXCESS OF 70 MPH. THESE STORMS WERE LOCATED ALONG A LINE EXTENDING FROM ATLANTA TO GEUDA SPRINGS... MOVING SOUTHEAST AT 25 MPH.

THESE STORMS WERE LOCATED ALONG A LINE EXTENDING FROM 5 MILES SOUTH OF DOUGLASS TO 6 MILES EAST OF SOUTH HAVEN...AND MOVING SOUTHEAST AT 25 MPH.

Typical Values of ZDR



Increasing
Melting & Wetness

Ref: WDTB elearning

April 9th 2011

Stafford County, KS

Three body scatter spike (TBSS)

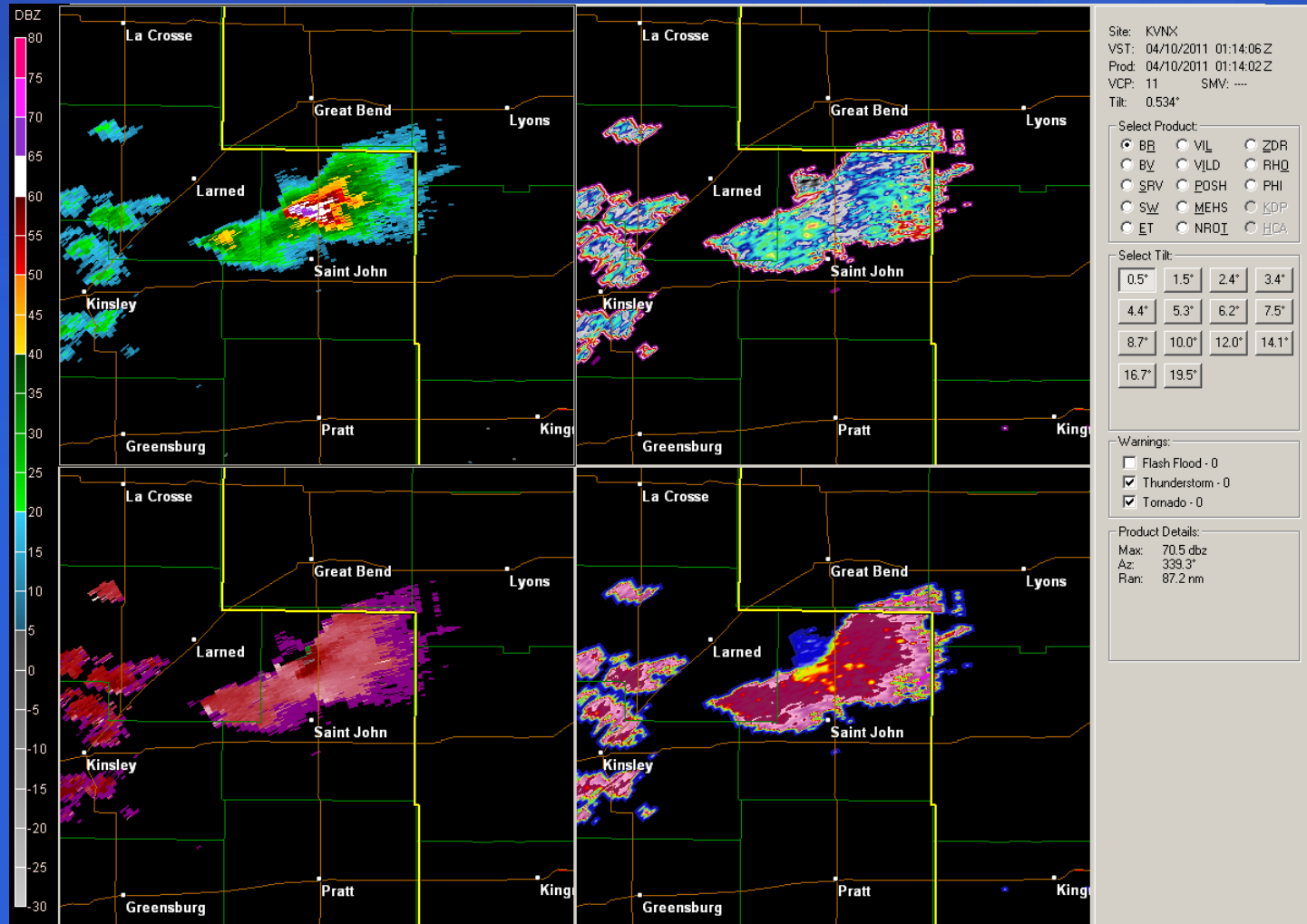
Large Hail

April 9th 2011, Stafford County, KS

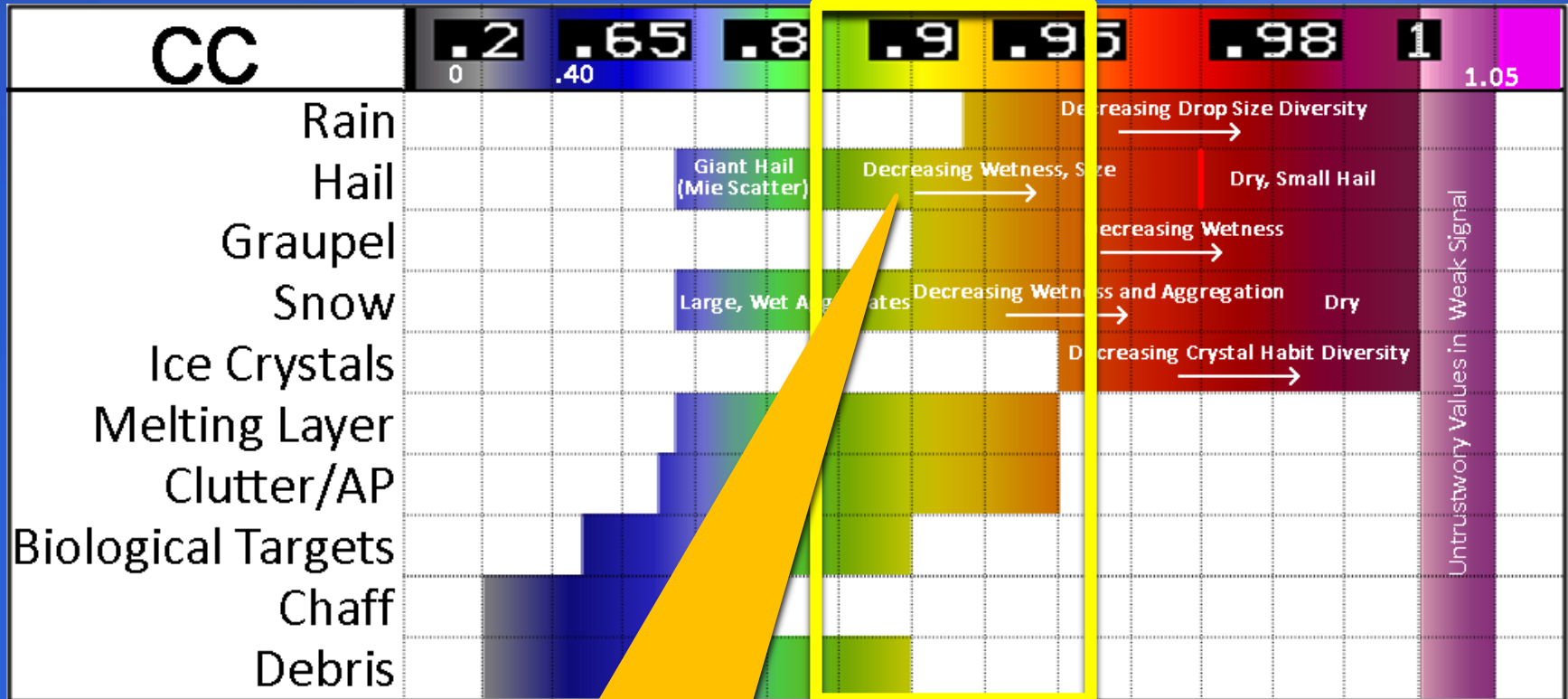


Large Hail Reports

April 9th 2011, Stafford County, KS



Typical Values of CC

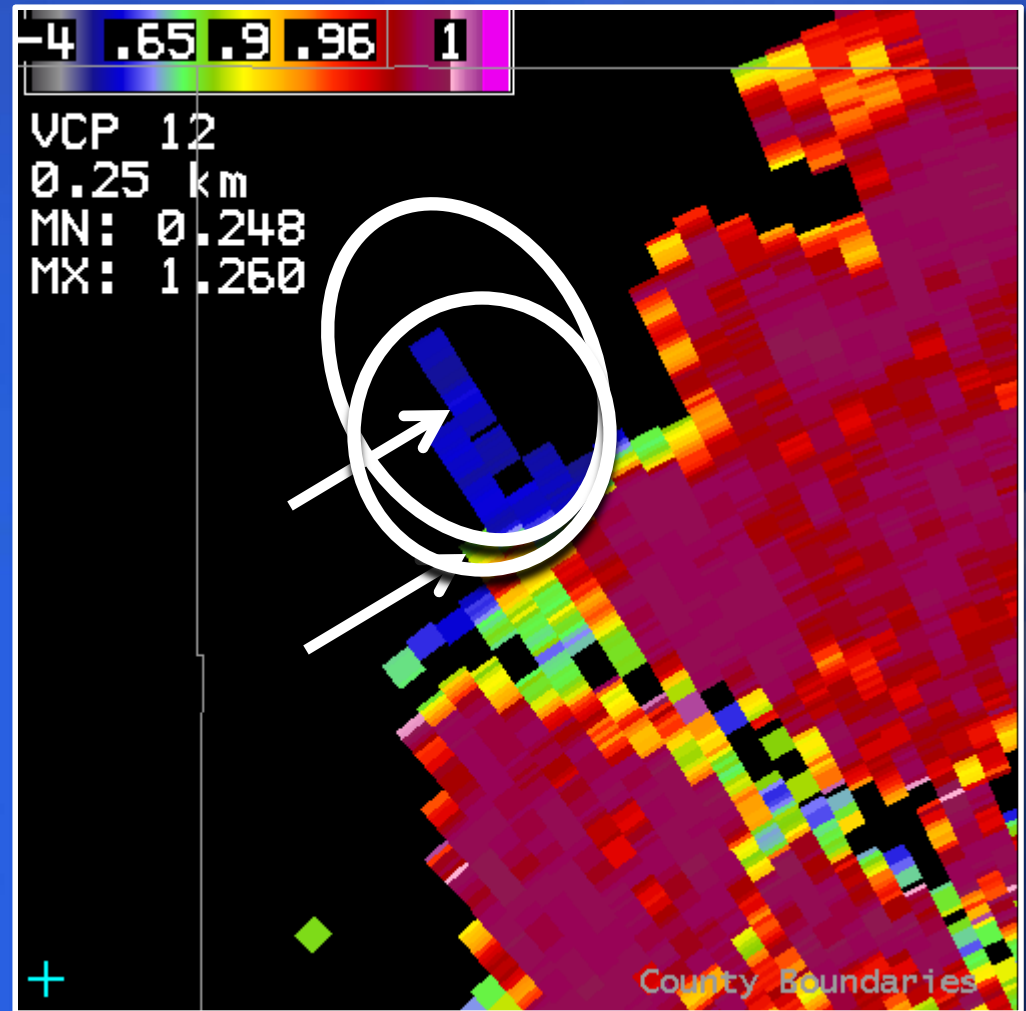


Giant Hail / Decreasing wetness/Size

Ref: WDTB elearning

Three-body Scatter Spike (TBSS)

- Generally radially-aligned spike of low DBz
- ZDR:
 - Strongly positive
 - Decreases with increasing range
- CC very low, usually < 0.5



Ref: WDTB elearning

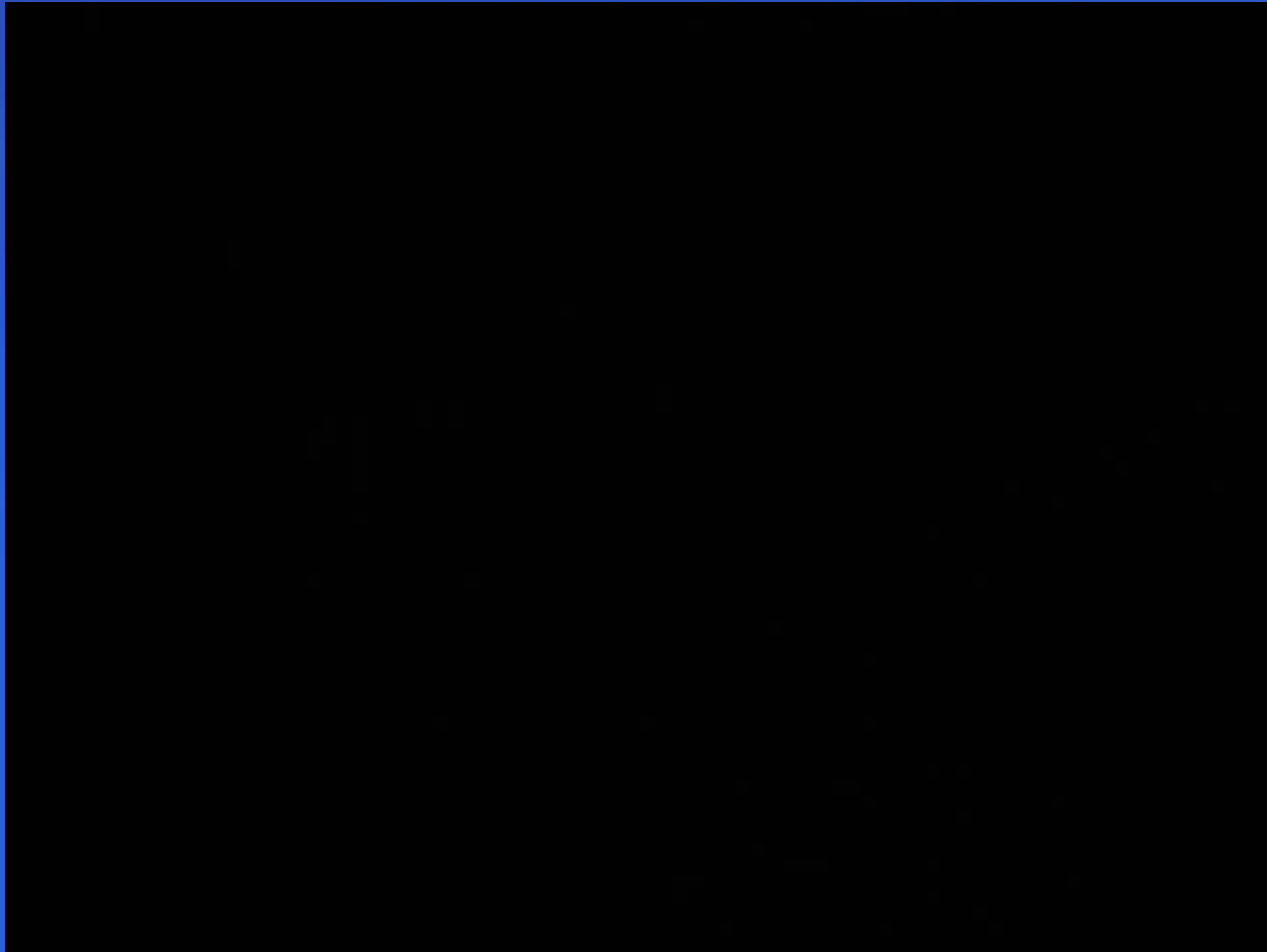
June 9th 2011

Wichita, KS

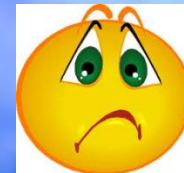
Large Hail



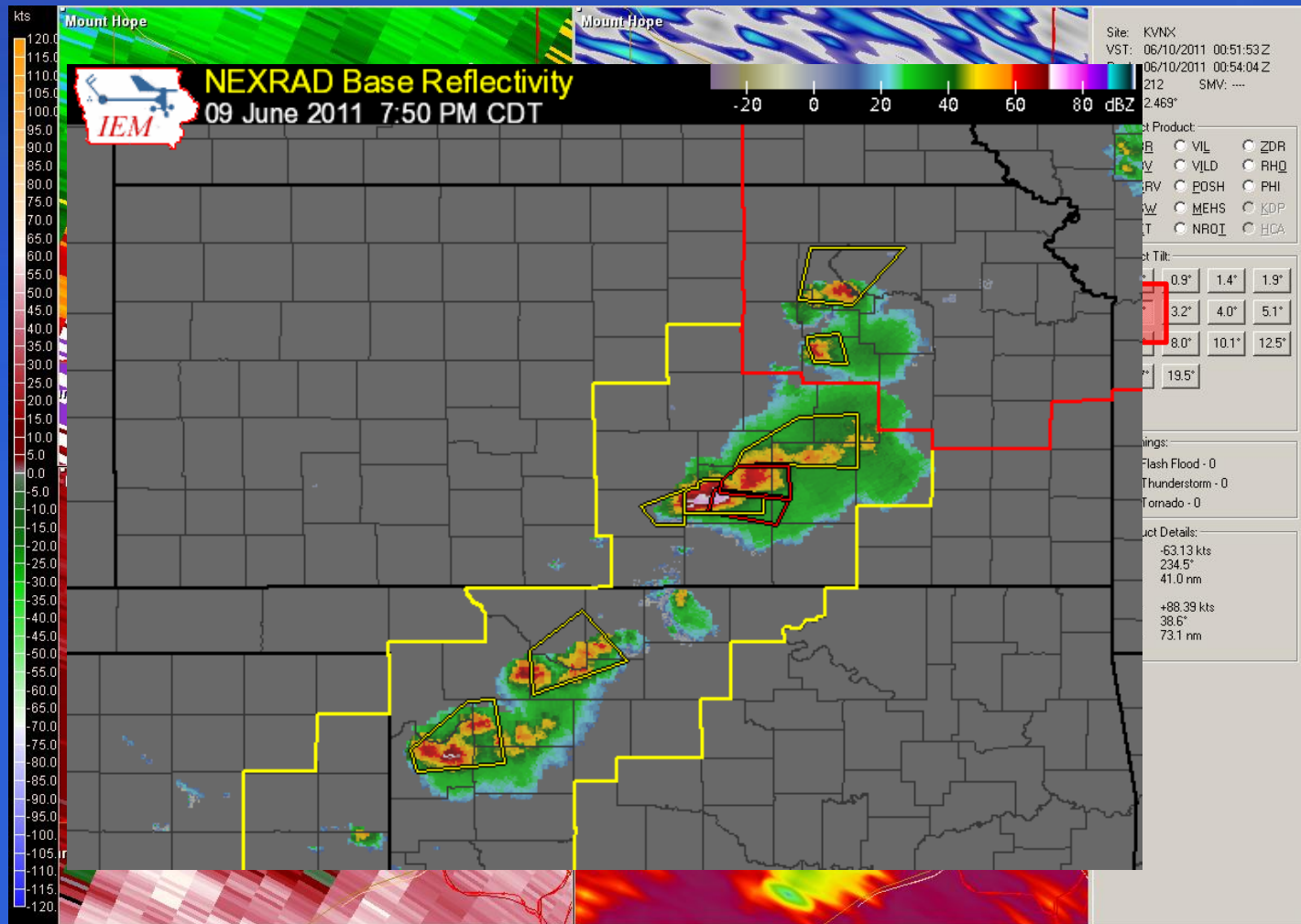
June 9th 2011, Wichita, KS, Large Hail



“My backyard”



June 9th 2011, Wichita, KS, Large Hail



Thanks for listening

Contact information:

- Brad.ketcham@noaa.gov
- Chris.jakub@noaa.gov
- **References:**
- WDTB elearning, cited 2011: Dual Polarization Radar Operations Course: Dual-Pol Radar products: Correlation Coefficient (CC).
- [Available online at <http://www.doc.learn.com>]
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- WDTB elearning, cited 2011: Dual Polarization Radar Operations Course: Dual-Pol Radar products: Tornadic Debris Signatures..
- [Available online at <http://www.doc.learn.com>]