

Jobsheet

The Multiple-Radar / Multiple-Sensor (MRMS) Products

ANSWER KEY

NOTE

Some of your answers might not be exact so “give or take a few”!

Exercise 1:

1. Document the corresponding reflectivity on all panels:

a) KTLX 0.5° tilt 31.5 dBZ

b) reflectivity _0C 42.2 dBZ

c) reflectivity _-10C 47.5 dBZ

d) reflectivity _-20C 51.7 dBZ

2. What is the time trend of the reflectivity core intensity at 0°C to -20°C?
(upward, neutral, downward)

Upward

3. Going back in time, from the isothermal reflectivity products above, at what temperature level aloft does the 50 dBZ echo first appear? -20 °C

4. What stage in development is this storm at 1926z?

Developing

Exercise 2:

1. Time of 1" hail _____ **1930** _____ UTC
2. MESH maximum _____ **1** _____ inches
3. Echotop_50 _____ **32.7** _____ kft
4. Reflectivity_-20C _____ **56.6** _____ dBZ
5. H50_Above_ H253 _____ **12.7** _____ kft

Step forward in time until the MESH maximum reaches 2".

Document the following after you place your cursor over the point of maximum MESH.

6. Time of 2" hail _____ **2004** _____ UTC
7. MESH maximum _____ **2** _____ inches
8. Echotop_50 _____ **48.1** _____ kft
9. Reflectivity_-20C _____ **62.0** _____ dBZ
10. H50_Above_ H253 _____ **27.8** _____ kft

At this time, zoom all the way out to view all of the storms in Oklahoma. Invoke the right mouse button menu while the cursor is on the four panel display. Select 'load to all panels'. Load county names. Be prepared to time how quickly you come up with the answers.

11. How many total significant storms are there? _____ **4** _____

12. Identify the significant storms by the county and directional location in that county (e.g., southern Dutchess)

_____ **Woodward** _____
_____ **Eastern Dewey** _____
_____ **Eastern Custer** _____
_____ **Eastern Washita** _____

13. Using the four parameters in the display, how does this storm rank with all of the others?

Either answer is correct: #1 or #2 after Eastern Dewey Storm

Exercise 3:

1. At what time do you think was the strongest tornado signature on this storm using your traditional radar analysis methods? _____ UTC

There are several possible answers:

a. 2201 UTC if based on debris ball, 68 dBZ

b. 2048-2218 UTC based on velocity couplet, there is no single correct answer

c. There is a peak of 0.039 s^{-1} low-level azimuthal shear in western Canadian county based on the rotation track product (no time given)

2. What parameter did you use to determine this and what values did you record? _____ ***There is no single correct answer*** _____

3. Using the low-level and mid-level azimuthal shear and other AWIPS tools, from what direction is the storm moving at this time? ***~260***°

4. Was this different from 1-2 hours previous, and explain the difference?

(yes/no) _____ ***Yes, the storm turned to the right*** _____

5. What is the maximum LL and ML azimuthal shear at this time?

LL shear _____ ***see below*** _____ s^{-1} ML shear _____ ***see below*** _____ s^{-1}

There is no single correct answer since the times chosen may vary