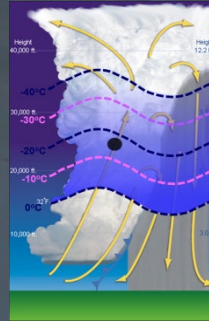


# Hail

## Near Storm Environment

- Large hail parameter (LHP) > 4
- Most unstable CAPE (MUCAPE)  $\geq 1600$  J/kg
- Effective bulk wind difference (EBWD)  $\geq 29$  kt

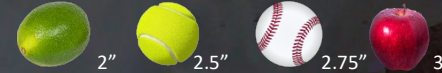
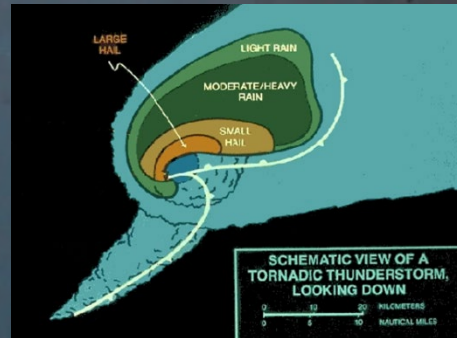
## Severe ( $\geq 1$ -inch)



## Storm Characteristics

- Discrete thunderstorm
- Weak echo region (WER)
- 50 dBZ thickness above the melting level  $\geq 16$  kft
- Reflectivity (Z)  $\geq 60$  dBZ
- Correlation coefficient (CC) = 0.93-0.97
- Three body scatter spike (TBSS)
- Storm-top divergence (STD)  $\Delta V > 70$ -102 kt
- Hail detection algorithm (HDA)  $\geq 1$ "
- Max estimated size of hail (MESH)  $\geq 1$ "

## Significant ( $\geq 2$ -inch)



- Significant hail parameter (SHIP) > 1
- Large hail parameter (LHP)  $\geq 5$
- Most unstable CAPE (MUCAPE)  $\geq 1850$  J/kg
- Effective bulk wind difference (EBWD)  $\geq 39$  kt
- 700-500 mb lapse rate (LR<sub>7-5</sub>)  $\geq 6.5$  °C/km
- Surface to equilibrium level bulk shear (Shear<sub>EL</sub>)  $\geq 46$  kt

- Discrete supercell
- Bounded weak echo region (BWER)
- Updraft persists  $\geq 30$  min
- 60 dBZ above -20 °C
- Correlation coefficient (CC)  $\approx 0.7$ -0.9
- Differential reflectivity (ZDR)  $\approx 0$  dB
- Storm-top divergence (STD)  $\Delta V > 130$ -162kt
- Peak rotational velocity (Vr) >27-41 kt
- Hail detection algorithm (HDA)  $\geq 2$ "
- Max estimated size of hail (MESH)  $\geq 2$ "

## Giant ( $\geq 4$ -inch)



- Large hail parameter (LHP)  $\geq 8$
- Most unstable CAPE (MUCAPE)  $\geq 3000$  J/kg
- Effective bulk wind difference (EBWD)  $\geq 46$  kt
- 700-500 mb lapse rate (LR<sub>7-5</sub>)  $\geq 7.0$  °C/km
- Surface to equilibrium level bulk shear (Shear<sub>EL</sub>)  $\geq 60$  kt



- Storm-top divergence (STD)  $\Delta V > 233$ -267 kt
- Peak rotational velocity (Vr) > 39-56 kt