HREET Algorithm
Operational Accuracy

David J. Smalley

Betty J. Bennett

NEXRAD TAC

28 APRIL 2005

Outline

- **High Resolution Enhanced Echo Tops (HREET) Product 135 Review**
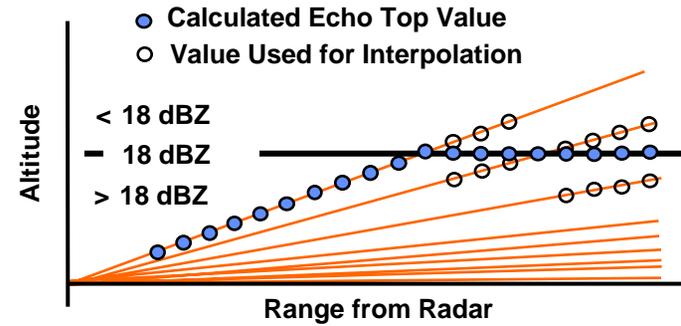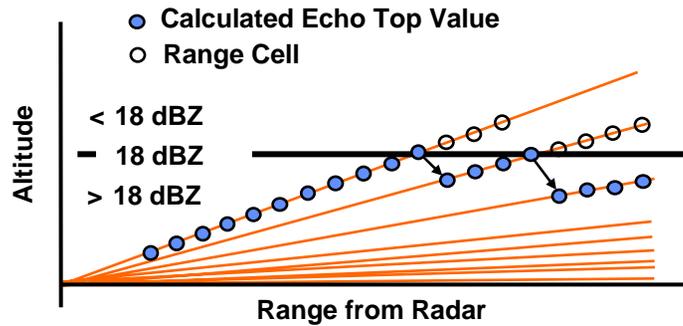
- **Operational accuracy**

High Resolution EET and ORPG Builds

- Initial availability with Build 4 release (Autumn 2003)

- Modified echo top threshold to 18 dBZ with Build 6 release (Autumn 2004)

- Maintained as needed with each Build

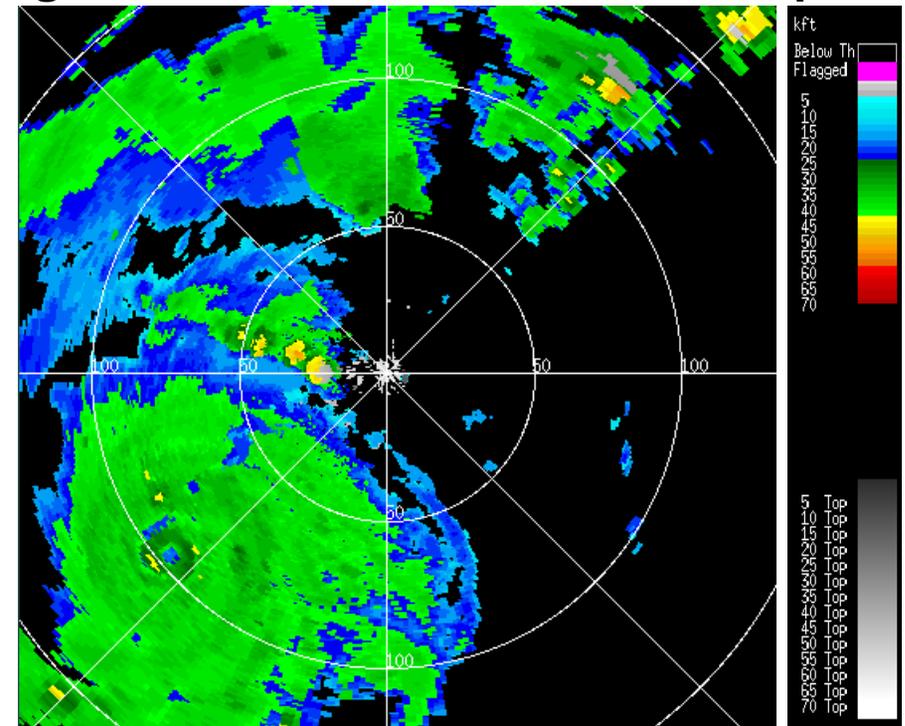- Most recent modification to account for ORPG platform refresh (change part of Build 8 release)

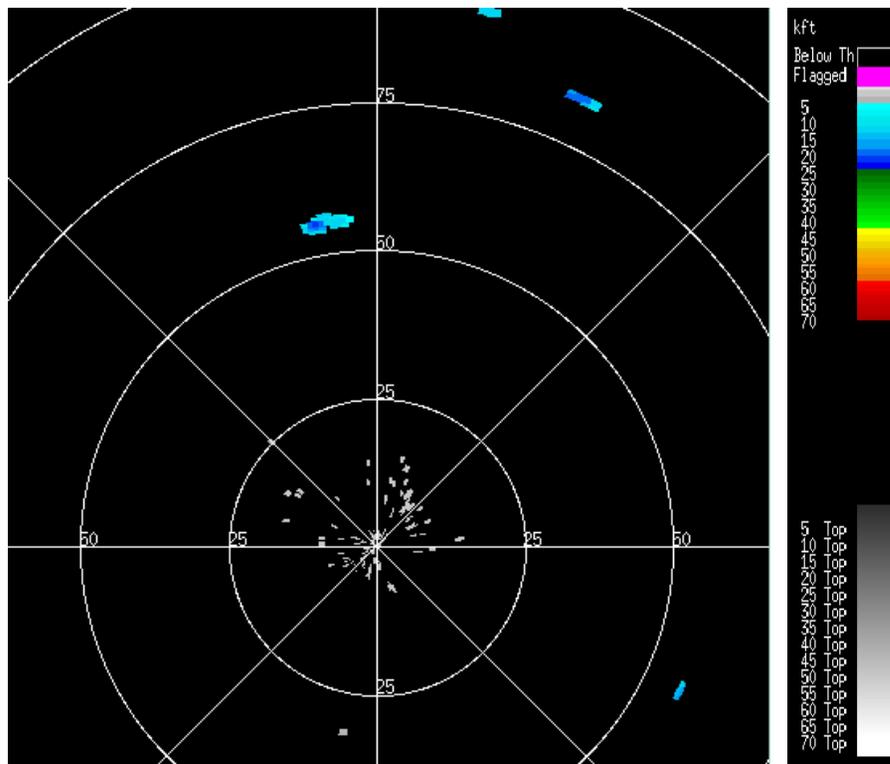# High Resolution Enhanced Echo Tops

Legacy Echo Tops

High Resolution Enhanced Echo Tops

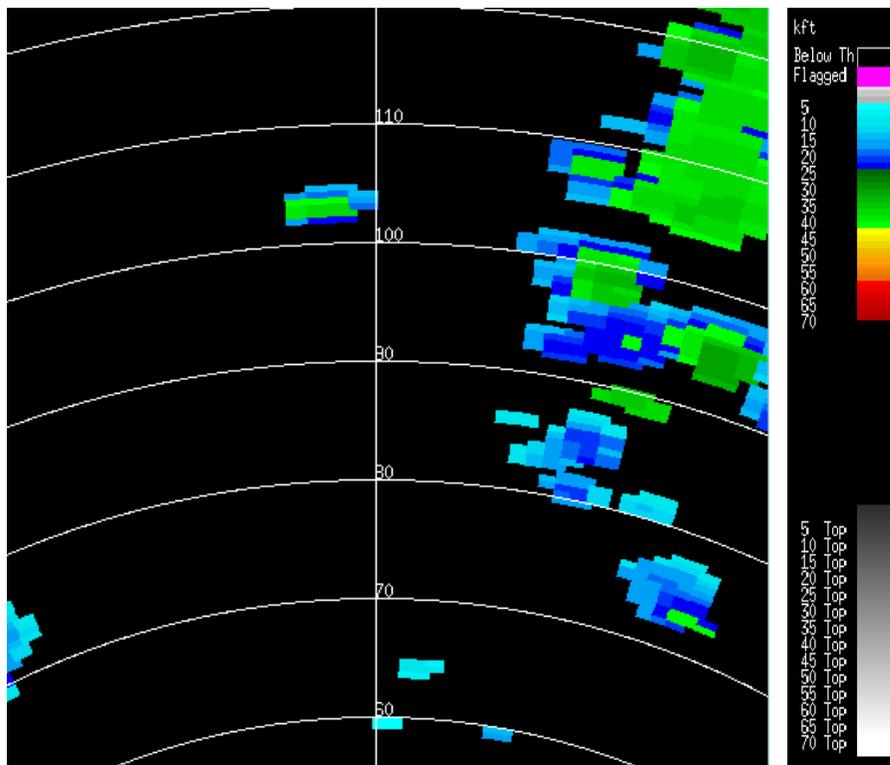HREET NEXRAD TAC 4
DJS 5/25/2007
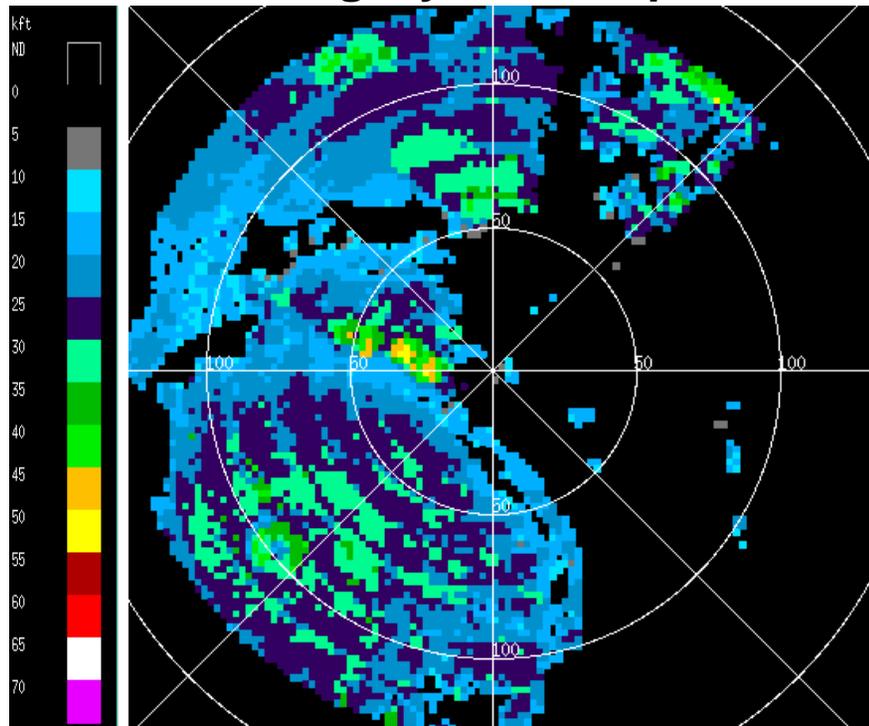
Ohio Mesaba In Situ Estimate

KILN Wilmington, OH

June 17, 2004 1330 UTC

- **Pilot estimates heights around 16 kft**

- **General mid-teens kft region with a low 20s kft peak**

Indiana Mesaba In Situ Estimate

KIND Indianapolis, IN

July 18, 2004 2030 UTC

- **Pilot estimates heights around 25 kft**

- **General mid-20s kft region with a mid-30s kft peak**

ATC Operational Usage

- **CIWS "Benefits Blitz"**
    - **PIREPS within a few kft of HREET**
    - **Reopenings of en route jet paths within a few kft**

- **Comparison with storm intensity (HRVIL)**
    - **Presence of low-topped convection**

- **Identification of relative gaps**

- **Forecast trends**

MIT Lincoln Laboratory

Summary

- **CIWS operational evidence provides strongest support for operational accuracy of a few kft**

- **Very limited in situ pilot observations**

- **ATC acceptance and usage of CIWS HREET in en route aviation**

- **No change to HREET proposed**