HREET Algorithm Operational Accuracy

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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

Calculated Echo Top Value

Range from Radar

Calculated Echo Top Value

Value Used for Interpolation

Altitude

< 18 dBZ

18 dBZ

> 18 dBZ

Range from Radar

< 18 dBZ

18 dBZ

> 18 dBZ

Altitude
Ohio Mesaba In Situ Estimate

- Pilot estimates heights around 16 kft
- General mid-teens kft region with a low 20s kft peak

KILN Wilmington, OH

June 17, 2004 1330 UTC
Indiana Mesaba In Situ Estimate

- Pilot estimates heights around 25 kft
- General mid-20s kft region with a mid-30s kft peak

KIND Indianapolis, IN
July 18, 2004 2030 UTC
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
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