KLGX
Low Elevation Angle Test
Algorithm Assessment

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NEXRAD Technical Advisory Committee

KLGX: Courtesy of WFO Seattle
KLGX Algorithm Assessment

• Assessment Period: November 1, 2011 – October 31, 2012

• Goal: To summarize the advantages and disadvantages of the lowest elevation angle in regards to impacts to algorithms, base data, and operations. Findings will contribute to the Cost Benefit Study.

• Lowest angle is 0.176 or ~0.2 degrees, but can be changed during the assessment. No plans to modify the angle at this time.

• Parties: ROC, WFO Seattle, WFO Portland, NWRFC, ZSE CWSU
ROC Evaluation

- Algorithms and base data analyzed for possible benefits or unusual features
- Products compared with and without 0.2 degrees
- WFO feedback important for operational significance
- Team: Bob Lee, Dave Zittel, Amy Daniel, Jessica Schultz

- Z, V, SW
- CC, KDP, ZDR
- ML, HC, HHC
- VIL, DVL, ET, EET
- CFC, CLD, CLR
- VWP, MD, TVS, STI, HSR
- OHP, THP, STP, OHA, STA
- OSD, SSD, OSW, SSW
KLGX Events

8 cases, 63.5 hours, More than 57,000 products

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>VCP</th>
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<tbody>
<tr>
<td>11/2/2011</td>
<td>00Z-13Z</td>
<td>31, 33</td>
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<tr>
<td>11/11-12/2011</td>
<td>16Z-00Z</td>
<td>11, 13</td>
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<td>12/25/2011</td>
<td>15Z-22Z</td>
<td>11, 13</td>
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<tr>
<td>1/2-3/2012</td>
<td>17Z-02Z</td>
<td>11, 13</td>
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<tr>
<td>1/18/2012 (Winter)</td>
<td>12Z-16Z</td>
<td>11, 13</td>
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<tr>
<td>1/20/2012</td>
<td>19Z-23Z</td>
<td>221, 223</td>
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0.2 deg Reflectivity - 27 Dec 11 21:30Z - VCP 13
0.5 deg Reflectivity - 27 Dec 11 21:30Z - VCP 13
OHP & OHA - 27 Dec 11 23:41Z - VCP 13
LGL vs LGX VWP Algorithm Evaluation
25 Dec '11 Wind Direction Comparison

KLGL (0.2deg) 1 KFT
KLGX (0.5deg) 1 KFT

Dave Zittel
LGL vs LGX VWP Algorithm Evaluation
25 Dec '11 Wind Speed Comparison

Dave Zittel
LGL vs LGX Storm Cell Location/Identification
25 December 2011, 14:58Z to 17:12Z
WFO Feedback

• Nov 22 – Strong Wind Event

  - Staff used KLGX 0.2 degree velocity data
  - 55-60 kt winds 500-600 ft off the ground
  - Staff issued High Wind Warning & Gale Warning
  - 47 mph at Hoquiam ASOS, peak gust of 68 mph
WFO Feedback

• WFO Survey – Jan 2012:
  
  - Beneficial for low level wind analysis
  
  - Better view of fronts and precipitation
  
  - More clutter, but is manageable
  
  - Possible benefits for waterspout detection
Summary

• Review & Analysis continues through October 2012

• Operational Benefits: low level winds, precipitation, fronts

• Dual Pol is helpful in mitigating impacts of sea clutter

• No unanticipated impacts from lower angle on algorithms