Status of TODWL and GWOLF Activities and Plans for future Airborne DWL

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GWOLF
(Groundbased Wind Observing Lidar Facility)

- Funded by IPO as part of NPOESS development of cal/val program for space based wind observing systems such as QuikScat, WindSat, CMV, WVMV and future DWLs
- Currently the TODWL system mounted in a trailer; plan to replace TODWL scanner with a roof mounted hemispherical scanner. Scanner tested; being repaired
VALIDAR & GWOLF at the Lidar Intercomparison Facility

Location Of Target Lights
Bldg 1297
R-B-Y-G
Validar/GWOLF Comparisons

- Performed at LaRC’s LIF
- Horizontal and vertical stares
- 200m resolution for Validar
- 1 minute averaging
Cloud returns

• Performed at LaRC’s LIF

• Objective is to understand how to process and interpret GWOLF returns from cloud boundaries (large ~ 15 -20 dB backscatter gradients)
GWOLF: Vertical DWL Profiles for 10/09/03 0915

DWL LOS Wind (m/s)

Range Gate

Profile Number

LOS Wind (m/s)
- 2 to 25
- 1 to 2
- 0.5 to 1
- 0 to 0.5
- -0.5 to 0
- -1 to -0.5
- -2 to -1
- -25 to -2

DWL Signal (db)

Range Gate

Profile Number

Signal (db)
- 30 to 50
- 27 to 30
- 24 to 27
- 21 to 24
- 18 to 21
- 15 to 18
- 12 to 15
- 9 to 12

SWA Graphics 2003
Vertical velocity from VADs

- Performed at LaRC’s LIF
- Question is “How accurate and reliable is the estimate of the vertical velocity using the offset in the sine fit of a partial VAD”
- Interweave a 25 second vertical stare into a 7 point partial VAD.