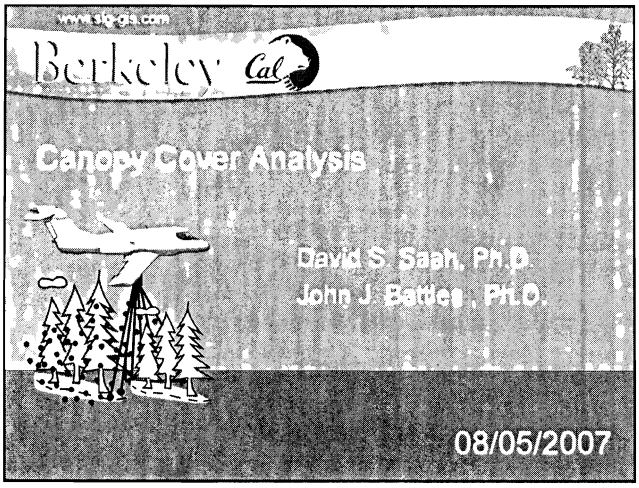
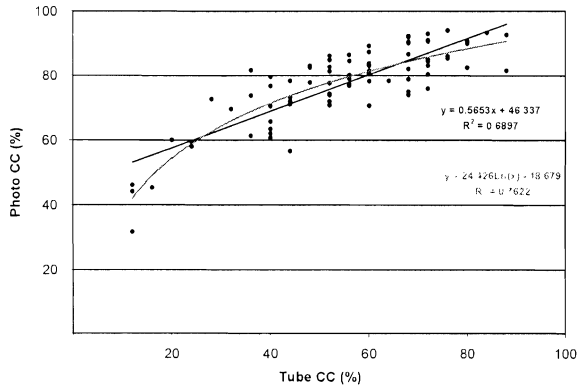


Study Area

Field Photo Method vs. Field Tube Method



Fractional Residual Calculation

Example Data Point

- Photo 90
- Tube 80

ABMA	0
ABCO	30
ABMA	10
PICO	20
PIJE	10
PIMO	0
POTR	0
TSME	10

Residual Calculation

80t – 90p = -10r

- Tube is 10% lower then Photo measure

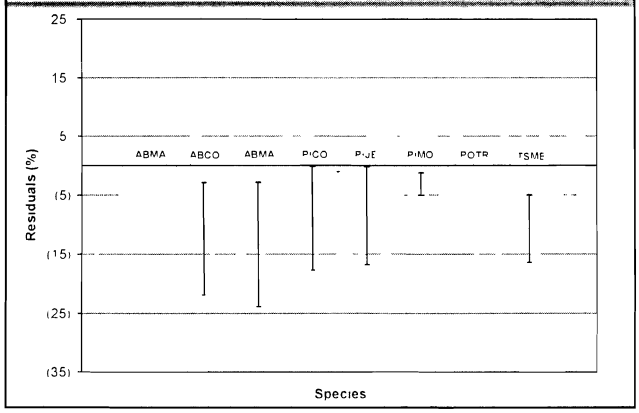
Fractional Residual Calculation

Assume linear relationship between residual error and Species measured

ABCOfr = (30 / 80) * -10r = -3.75

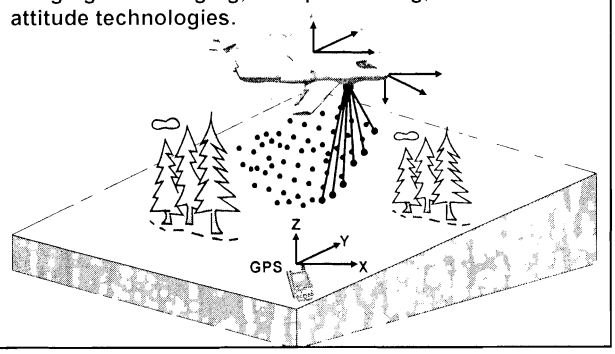
- Since ABCO accounts for 37.5 % of the Total Tube CC reading and there is a -10% residual between the Photo Measure and the Tube Measure, ABCO is allocated -3.75 of the total -10 Photo residual.

Fractional Residual Analysis Summary



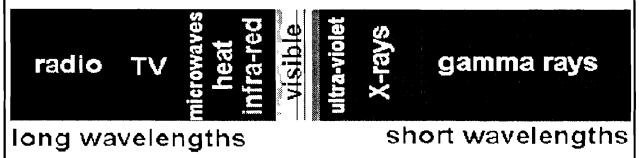
How does LiDAR work?

- Collects multiple layer X, Y, Z & Intensity data by merging laser ranging, GPS positioning, and inertial attitude technologies.



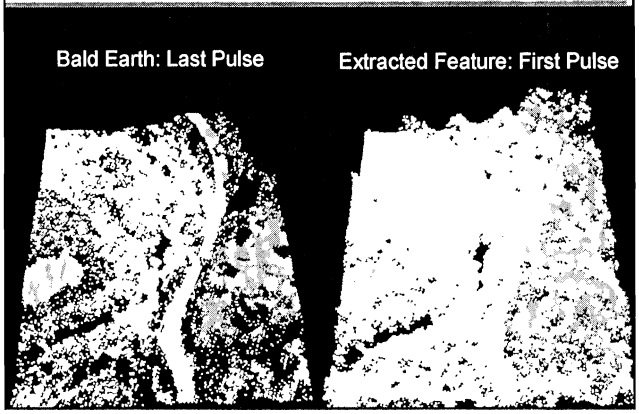
Light Detection And Ranging

- RADAR radio waves are transmitted into the atmosphere, which scatters some of the power back to the radar's receiver.



- LIDAR also transmits and receives electromagnetic radiation, but at a higher frequency. LIDAR operates in the ultraviolet, visible & infrared region of the electromagnetic spectrum.

LiDAR Data: Z Points

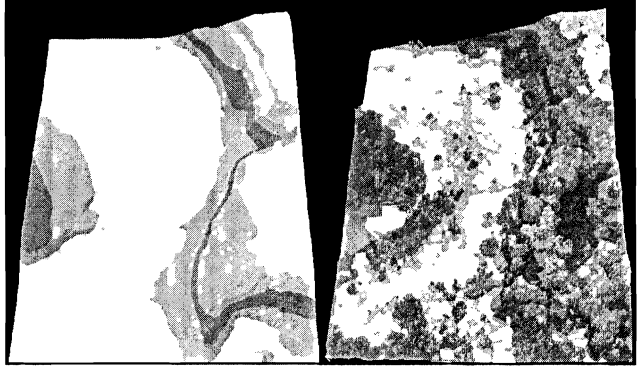


LiDAR Data: Intensity Points

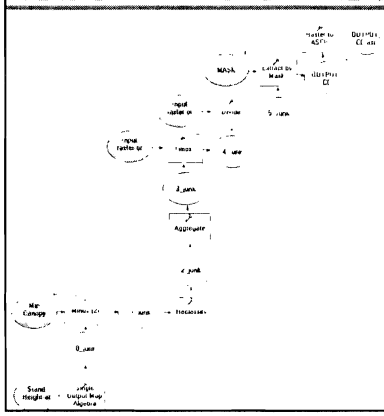
Bald Earth: Last Pulse | Extracted Feature: First Pulse

LiDAR Data: Surface

Bald Earth: Last Pulse | Extracted Feature: First Pulse



Lidar LiDAR Canopy Cover Method



3	0	0	1	2
3	6	7	6	4
2	6	8	2	0
0	7	8	10	11
0	3	2	12	11

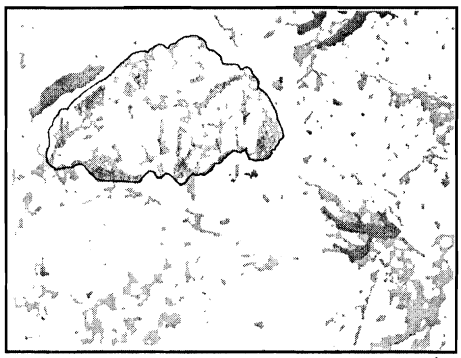
0	0	0	0	0
0	1	1	1	0
0	1	1	0	0
0	1	1	1	1
0	0	0	1	1

Canopy Cover Base (%)

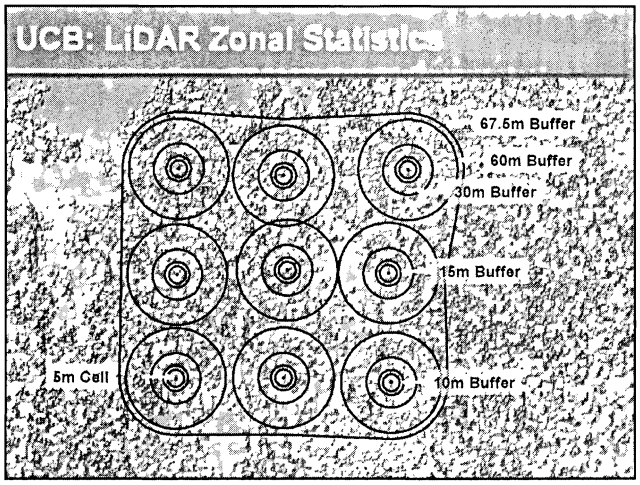
CC (%)

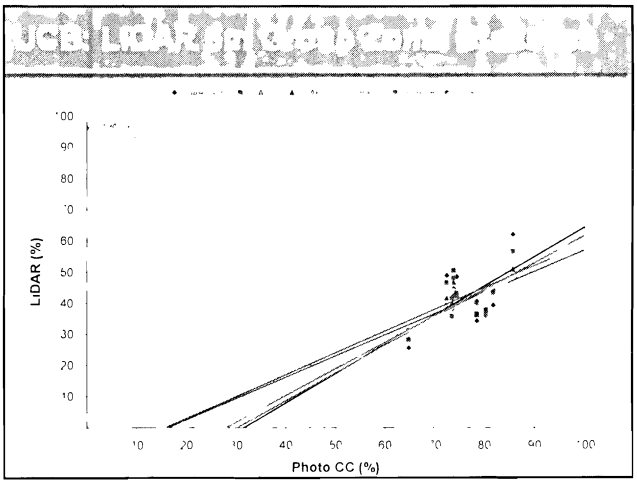
100 %

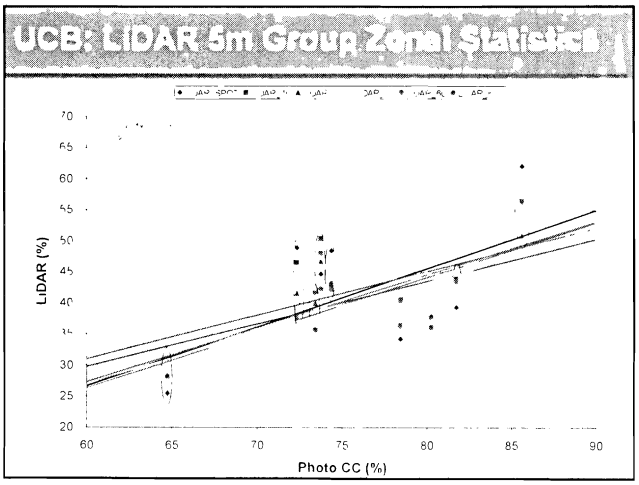
0 %

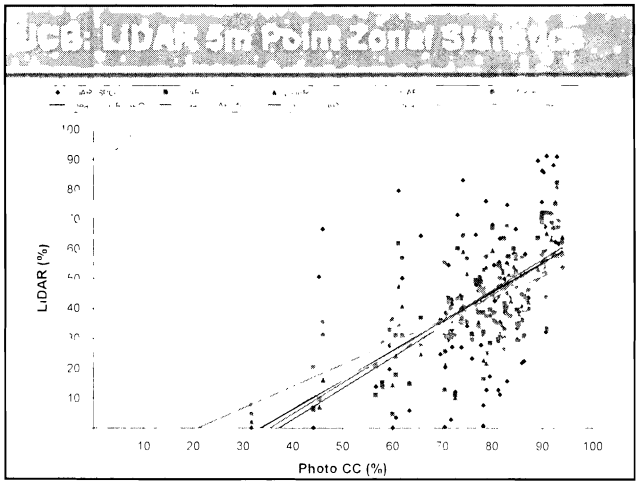


0 2.5 5 10 Miles

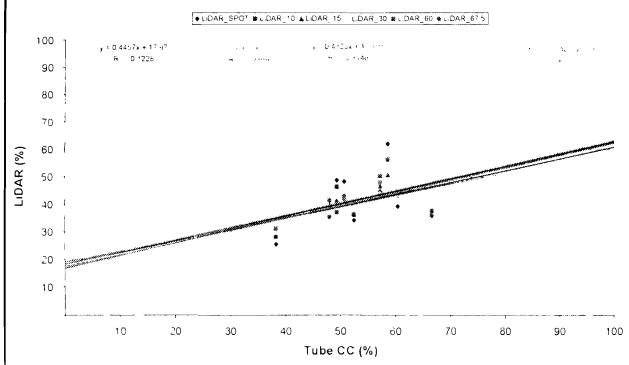

UCB: LiDAR Zonal Statistics
67.5m Buffer
60m Buffer
30m Buffer
15m Buffer
5m Cell
10m Buffer


LiDAR (%)
Photo CC (%)

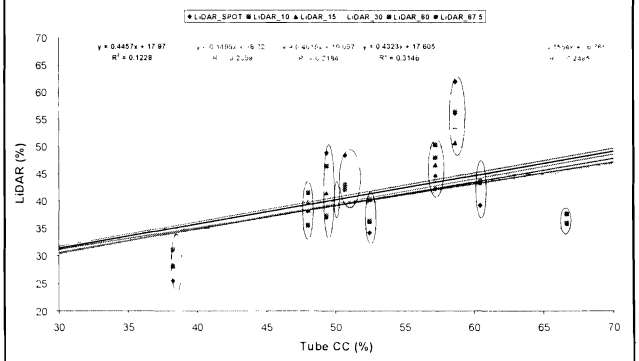
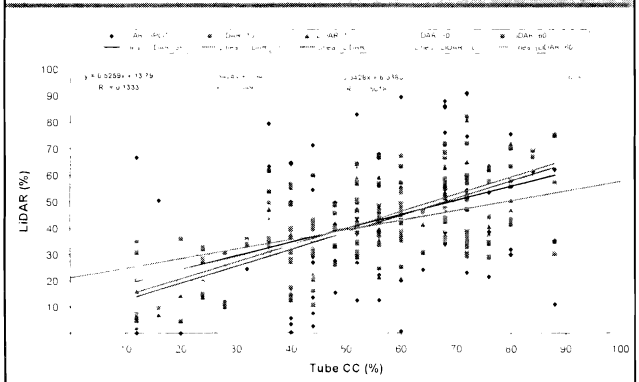

UCB: LiDAR 5m Group Zonal Statistics
LiDAR (%)
Photo CC (%)


LiDAR (%)
Photo CC (%)

UCB: LiDAR 5m Group Zonal Statistics



UCB: LiDAR 5m Group Zonal Statistics



UCB: LiDAR 5m Point Zonal Statistics