



University of Idaho

College of Natural Resources

LEVERAGING PPDM NETWORK AND UAV LIDAR/MULTISPECTRAL IMAGERY FOR DEVELOPING REMOTE SENSED STAND METRICS

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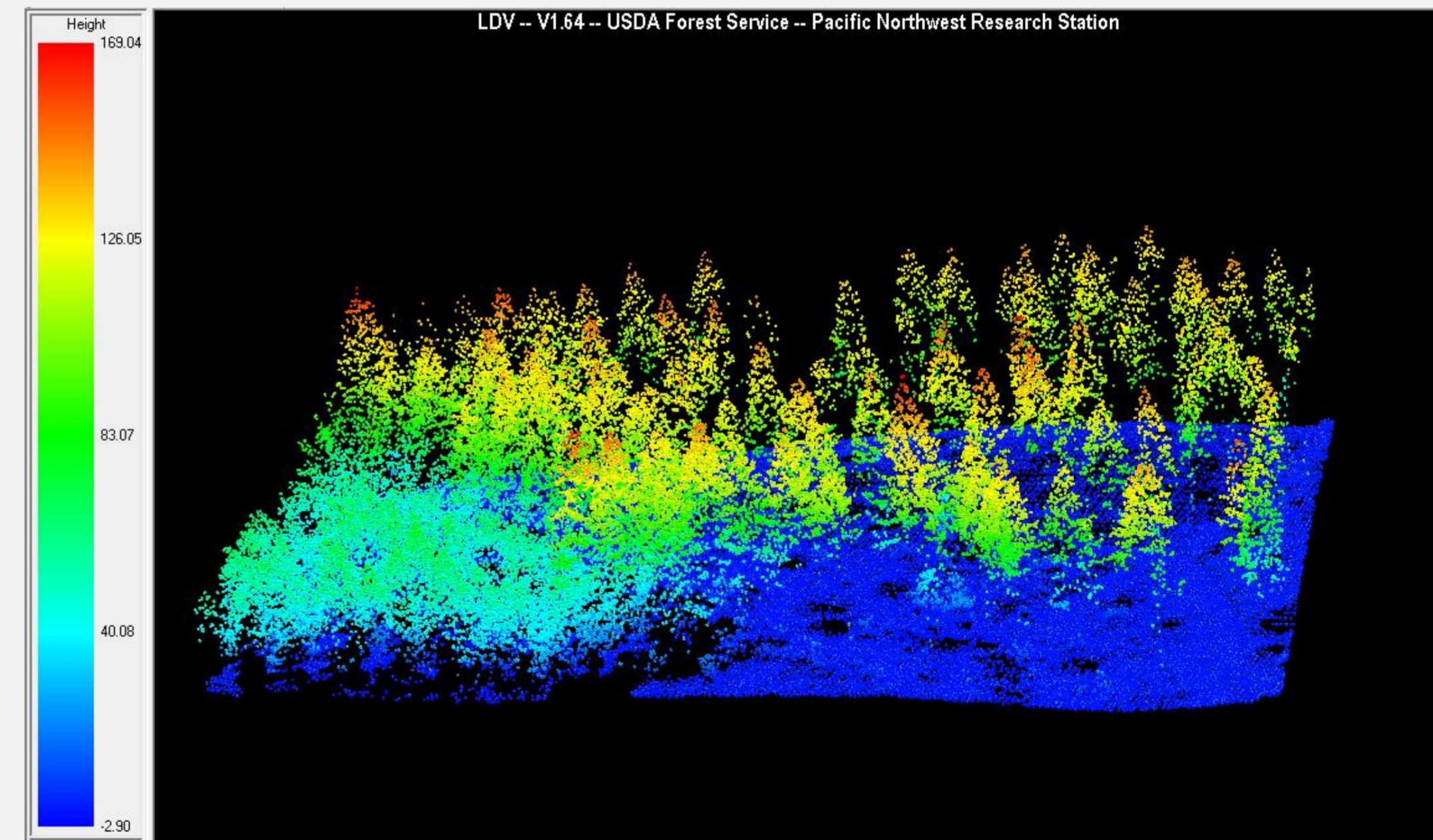
drone**seed**



UAV FOREST MEASUREMENTS

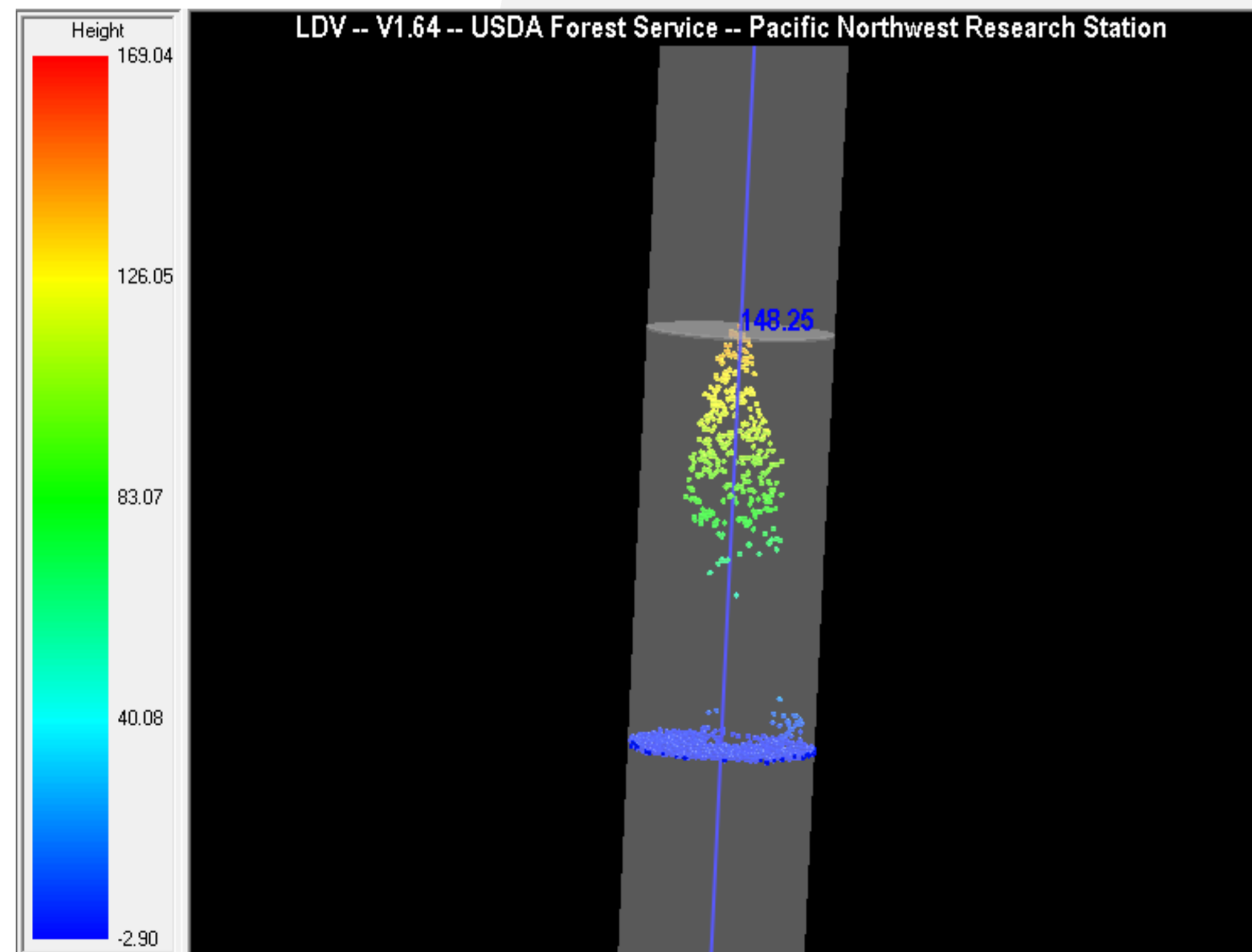
MOVING TOWARD THE LIDAR/REMOTE SENSING ERA

- Need for accurate, economical and timely information
- Rapid development of forest metrics from lidar point cloud data
- Re-measurements, acquisition source and purpose
- UAV acquired data
 - Compact and easily transported = acquisition flexibility
 - Temporal resolution – ease of repeat measurements
 - High resolution - increase point cloud density and canopy penetration



DEVELOPMENT AND VALIDATION

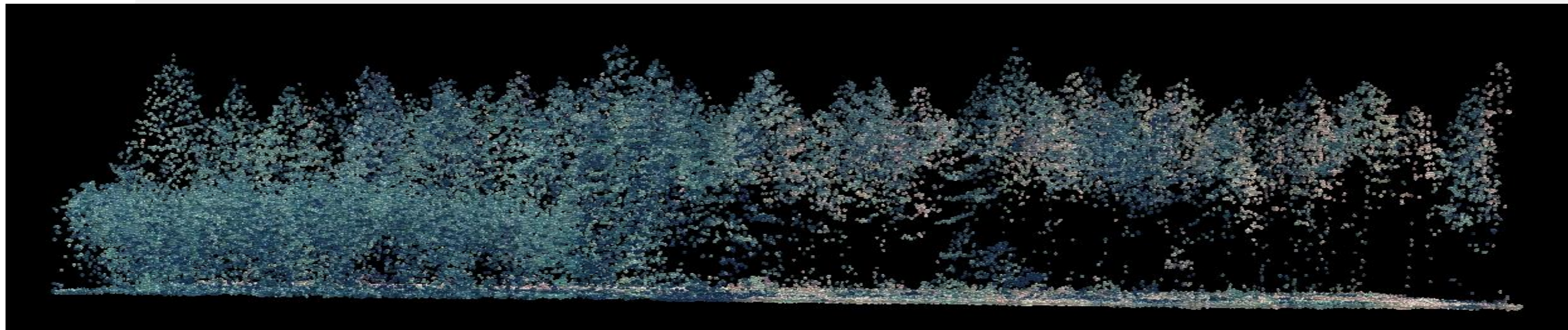
PPDM SITES



- PPDM plots have baseline and repeat measurements on a range of site types, species composition and stand densities all across the Inland Northwest
- Utilize network of PPDM research plots to build, evaluate and validate lidar derived forest measurements
- Evaluate correlation and prediction ability of extracted point cloud metrics with tree data
- Sites will have overlap between UAV and airborne acquired data

RESEARCH QUESTIONS

- Effect of site and stand factors on model accuracy
 - Canopy penetration on varying stand densities, species mix
- UAV vs. Airborne acquired lidar data
 - Pulse densities – Accuracy gained? What is threshold?





OPPORTUNITIES

COLLABORATIONS AND GRANTS

We have an opportunity to collaborate and network with LiDAR source providers and LiDAR analysts to begin developing LiDAR research around IFC Density Management plots

- I** We have submitted a \$25K Jumpstart grant request to collaborate with DroneSeed
- I** Outcomes from this grant, if funded, would be leveraged to pursue a USDA-AFRI grant that would expand this area of research