



Data Collection & Product Report for 2020 Seed Project: Linking Snowpack Heterogeneity to Subsurface Storage and Transmissivity in the Rain-Snow Transition Zone

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Data Collection Summary:

Collection Dates, Flights:	2 flights on March 17, 2022 (DOY 076)
Aircraft, Equipment:	Robinson R66 (N7063M), RIEGL VQ-580 II (H2225798)
Flight Plan Parameters:	Flying Height: 500 m AGL, Speed: 60 kt, Overlap: 50%
Equipment Parameters:	PRR: 300 kHz, LPS: 200/s, Scan Angle: $\pm 37.5^\circ$
Collected Area:	63.4 km ²

GNSS Reference Station Summary:

Station Name	Operating Agency	Control Coordinates (NAD83(2011) / Ellipsoid)
GSE1	NCALM	43°55'48.98921" N, 123°00'30.72208" W, 141.317 m
P377	UNAVCO	44°03'07.61252" N, 122°53'13.35052" W, 142.811 m
SEPT	NCALM	43°55'49.11888" N, 123°00'30.79429" W, 141.470 m

Data Processing Summary:

Data Adjustments:	Line-by-line roll/elevation correction, project elevation shift of 0.295 m
Ground Classification:	Two iterations of moderate ground determination, manual classification of misclassified ground
Elevation Model Generation:	Elevation values calculated from Kriging

Data Accuracy Summary

Strip-to-Strip Average	0.066 m
GCP Residual RMS	0.032 m (calibration area)

Data Product Summary:

Horizontal / Vertical Datum:	NAD83(2011) / NAVD88 (GEOID18)
Projection / Units:	UTM Zone 10N / meters
Point Cloud Tiles:	1000-m \times 1000-m tiles in LAS format (Version 1.4) with non-ground (1), ground (2), and outlier (7) returns
Bare-Earth Elevation Model:	GeoTIFF @ 1-m resolution from classified snow and ground
First-Surface Elevation Model:	GeoTIFF @ 1-m resolution with canopy included

Area of Interest:



Location of survey polygon, aircraft trajectories, and GNSS reference stations

The requested survey area consisted of one polygon located east of Eugene and west of Bend, OR. The polygon enclosed approximately 40 km² (25 mi²).