Data Collection & Product Report for 2021 Seed Project: Quantitative Characterization of Dune-Dune Interactions from High-Resolution Topography

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Data Collection Summary:

Collection Dates, Flights:	1 flight on October 10, 2022 (DOY 283)
Aircraft, Equipment:	Robinson R44 II (N7106Z), RIEGL VUX-240 (H2224985)
Flight Plan Parameters:	Flying Height: 550 m AGL, Speed: 50 kt, Overlap: 50%
Equipment Parameters:	PRR: 300 kHz, LPS: 180/s, Scan Angle: ± 37.5°
Collected Area:	38.2 km²

GNSS Reference Station Summary:

Station Name	Operating Agency	Coordinates (ITRF2014 / Ellipsoid)
IMPS	UNAVCO	34°09’27.22309” N, 115°08’42.36846” W, 563.240 m
KBLH	NCALM	33°36’53.53337” N, 114°42’41.38970” W, 88.562 m
P623	UNAVCO	34°11’20.15729” N, 114°35’57.86534” W, 267.756 m

Data Processing Summary:

Scan Angle Cutoff	± 5.5°
Data Adjustments:	RiPRECISION least-squares best-fit adjustment to trajectory
Ground Classification:	One iteration of locally smooth surface determination using moderate tolerance, manual classification of misclassified ground
Elevation Model Generation:	Bare-earth calculated from Kriging, first-return calculated from TIN model

Data Accuracy Summary

Strip-to-Strip Average	0.036 m
GCP Residual RMS	N/A

Data Product Summary:

Horizontal / Vertical Datum:	NAD83(2011) epoch 2010.00 / ellipsoid
Projection / Units:	UTM Zone 11N / meters
Point Cloud Tiles:	1000-m × 1000-m tiles in LAS format (Version 1.4) with non-ground (1), ground (2), low point (7), and high point (18) returns
Bare-Earth Elevation Model:	GeoTIFF @ 1-m resolution from classified ground
First-Surface Elevation Model:	GeoTIFF @ 1-m resolution with vegetation included

Area of Interest:

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

The requested survey area consisted of one polygon located north of Blyth, CA. The polygon enclosed approximately 30.8 km^2 (11.9 mi^2).