

NSF Sponsored NATIONAL CENTER FOR AIRBORNE LASER MAPPING



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Airborne Laser Swath Mapping Project

An Investigation of the origin and evolution of Mima Mounds in California's Central Valley

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List of products – quick view

1. 1m DEM in ESRI GRID file format, based on the last return laser point datasets.
2. 1m Shaded Relief Map in ESRI GRID file format.
3. 1m interval Contour Map in ESRI coverage file format.
4. Raw laser point data (9 columns), ASCII format.
5. Tiled last return laser point data (xyz), ASCII format.
6. High resolution JPEG images for quick visualization.
7. Report on the data processing.

Comments

- The bare-earth classification (filtering) was performed using Terrasolid's TerraScan Lidar processing software. Details about the filtering process can be found in the Processing Report. Please note that these data are what we consider an improvement over the "first look" data you may have previously received. We suggest you use these new data for all your analysis.
- You may observe a periodic fine scale elevation variation throughout the dataset (about 5 to 20 cm, similar to a "corduroy" pattern), which is a property of the Optech LIDAR system, and it's within the machine's error limits. This variation can be removed by using a smoothing routine, but this process could smooth other features as well and we feel that the decision is best left with the PI.

What's on the DVD(s)

DVD1

GIS_Data – this folder contains the ArcInfo datasets and the associated “info” directory, for the Katalla area

“unflt_grd”	– 1m DEM based on the unfiltered last return point data
“unflt_shd”	– 1m Shaded Relief Map
“unflt_cnt”	– Contour Map, 1m interval

Projection: UTM zone 10N, with orthometric heights in NAVD88 computed using NGS GEOID03 model.

Images – This folder contains high resolution images for quick visualization (for both areas). The images follow the same naming convention as the ArcInfo datasets.

9_column.zip – ZIP file containing raw laser point data files in 9-column ASCII format, one file per flight strip. The 9-column is the most complete format.

The nine columns are as follows:

1. GPS time (seconds of week);
2. Easting last return;
3. Northing last return;
4. Height last return;
5. Intensity last return;
6. Easting first return;
7. Northing first return;
8. Height first return;
9. Intensity first return.

Note that in these 9-column files no geoid model has been applied – height values are ellipsoid heights and these height values will NOT match orthometric heights (elevations) found in the 3-column (xyz) output or in the 1-meter DEM grid nodes. The UTM zone code (10) is appended to the Easting coordinate in this nine-column format.

LR_NAVD88.zip – ZIP archive containing last return point data files, one file per flight strip. The XYZ data is projected in NAVD88 using the NGS GEOID03 geoid model.

Unfiltered_PointCloud_Tiles.zip - ZIP archive with unfiltered last return laser point data split in 2km x 2km tiles with 60m overlap.

Tile naming convention:

u<min_easting>_<min_northing>.xyz (ex. u505811_5193609.xyz), where:

“u” stands for “unfiltered”,

<min_easting> and <min_northing> are the coordinates of the lower left tile corner, ignoring the overlap.

The format is 3-column space delimited X Y Z:

X = Easting last return
Y = Northing last return
Z = Elevation last return

The projection is UTM zone 10N with orthometric heights in NAVD88 computed using the NGS GEOID03 model.

Unfiltered_SurferTiles.zip – ZIP archive containing 1m Surfer grids of the unfiltered tile dataset. The same naming convention as above. See the Processing Report for the gridding parameters.

Readme.pdf – this document

ProcessingReport.pdf – detailed report describing how the data was processed

Software required for using the data

The ZIP archives were created with WinZip v.10. If you encounter problems while unzipping the large archives (>2GB files), please make sure to use this software.

The ESRI Grids and Coverages can be viewed with all ESRI software, such as ArcGIS, ArcMAP, and ArcView 3.xx. Please contact NCALM if alternative formats are needed.