




The OpenTopography Community Dataspace allows users who are producing small to moderate sized topographic datasets to:

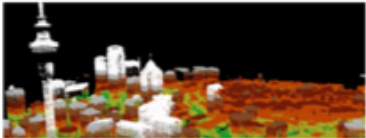
- Archive their data with OpenTopography
- Establish proper dataset citation
- Enable dataset sharing and reuse
- Provide educational applications
- Grid, subset, and visualize their data with standard OpenTopography tools (only if data is provided in a projected coordinate system)

[Getting Started](#) [MyOpenTopo](#)

 **OpenTopography**
High-Resolution Topography Data and Tools

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Community Contributed Data



Datasets listed below were uploaded to the OpenTopography Community Dataspace by users. These small to moderate sized dataset are archived by OpenTopography so they can be reused and cited (via Digital Object Identifier). Community contributed datasets can be found via the OpenTopography [Find Data](#) page so they are discoverable and downloadable alongside data hosted by OpenTopography.

Find out more about contributing data to OpenTopography [here](#).

[Contribute Dataset](#)

Airborne Lidar

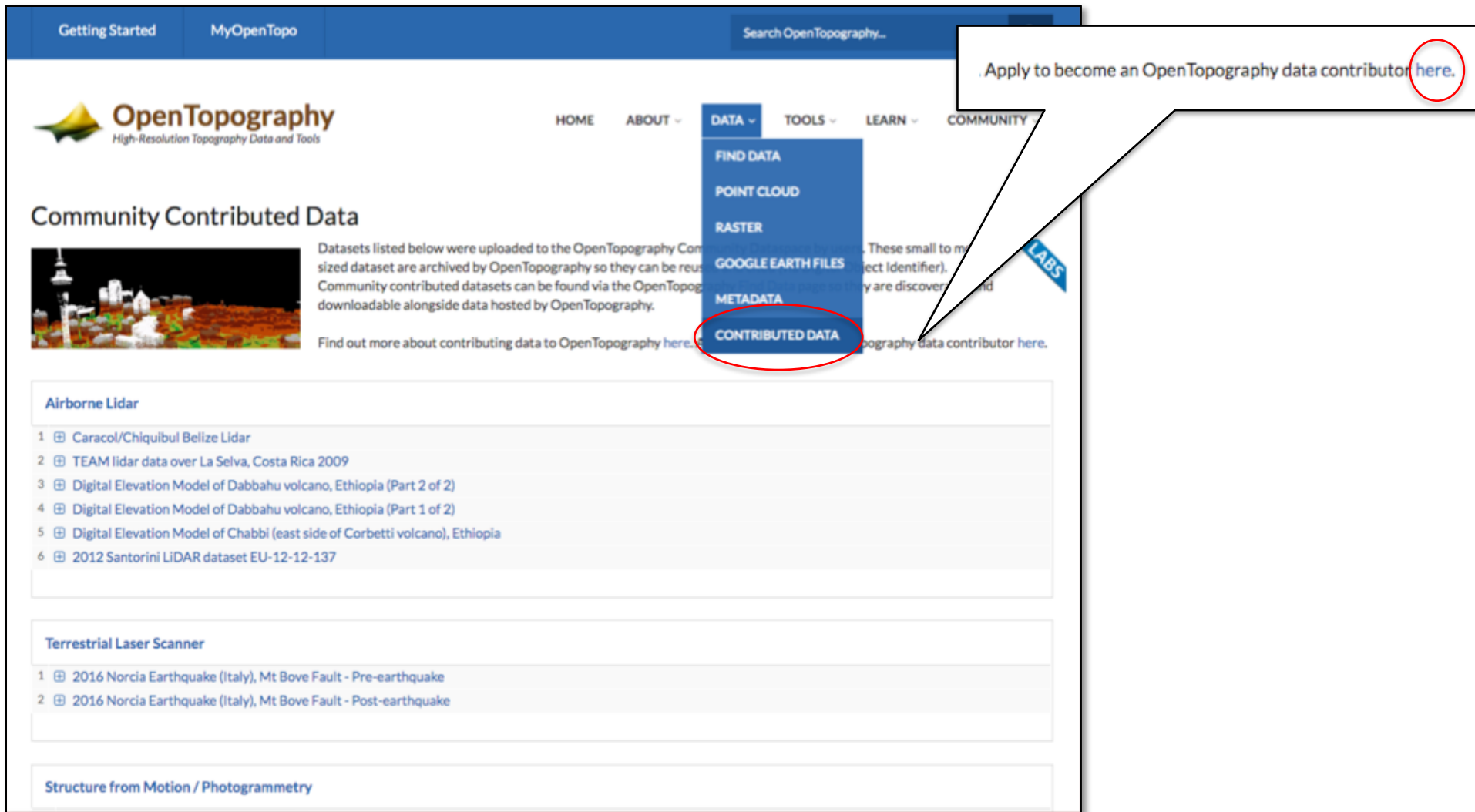
- 1 Digital Elevation Model of Dabbahu volcano, Ethiopia (Part 2 of 2)
- 2 Digital Elevation Model of Dabbahu volcano, Ethiopia (Part 1 of 2)
- 3 Digital Elevation Model of Chabbi (east side of Corbetti volcano), Ethiopia
- 4 2012 Santorini LIDAR dataset EU-12-12-137

Structure from Motion / Photogrammetry

- 1 Mirror Fault, Dixie Valley, Nevada
- 2 Digital Elevation Model of Urji (west side of Corbetti volcano), Ethiopia
- 3 Digital Elevation Model of Gedemsa volcano, Ethiopia

If you do not have a Community Dataspace account, you can apply for one:

- Go to Data → “Contributed Data”. From that page there will be a link to click in order to apply to become a data contributor.



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OpenTopography
High-Resolution Topography Data and Tools

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Community Contributed Data

Datasets listed below were uploaded to the OpenTopography Community Dataspace. These small to medium-sized datasets are archived by OpenTopography so they can be reused. Community contributed datasets can be found via the OpenTopography Community Dataspace. Datasets are discoverable and downloadable alongside data hosted by OpenTopography.

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Apply to become an OpenTopography data contributor [here](#).

Airborne Lidar

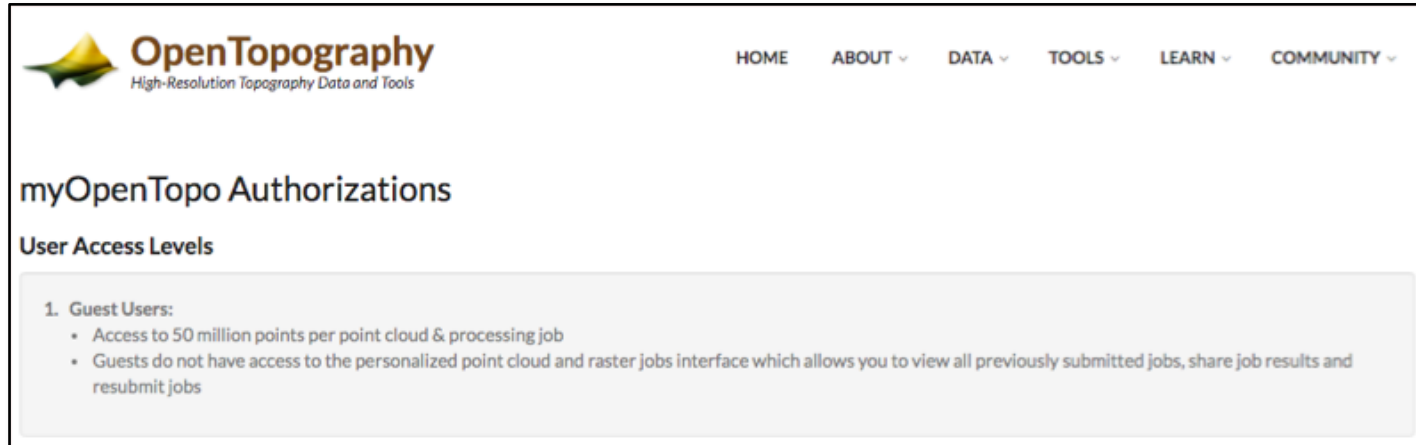
- Caracol/Chiquibul Belize Lidar
- TEAM Lidar data over La Selva, Costa Rica 2009
- Digital Elevation Model of Dabbahu volcano, Ethiopia (Part 2 of 2)
- Digital Elevation Model of Dabbahu volcano, Ethiopia (Part 1 of 2)
- Digital Elevation Model of Chabbi (east side of Corbetti volcano), Ethiopia
- 2012 Santorini LIDAR dataset EU-12-12-137

Terrestrial Laser Scanner

- 2016 Norcia Earthquake (Italy), Mt Bove Fault - Pre-earthquake
- 2016 Norcia Earthquake (Italy), Mt Bove Fault - Post-earthquake

Structure from Motion / Photogrammetry

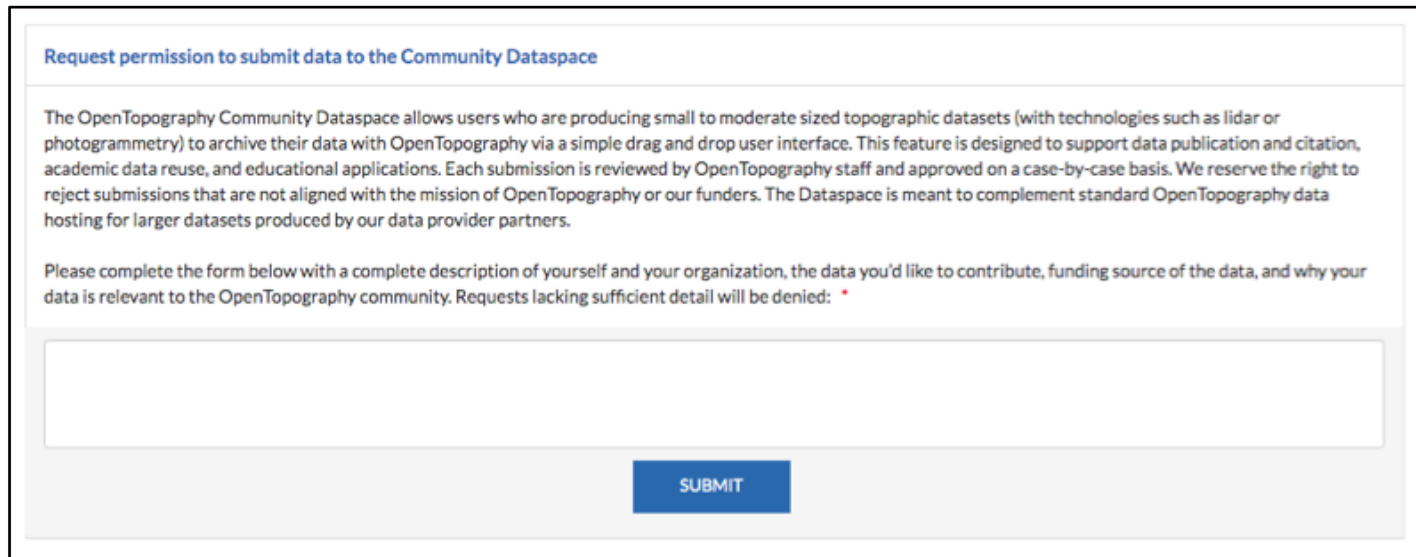
Users will be directed to their MyOpenTopo Authorizations page:



The screenshot shows the 'myOpenTopo Authorizations' page. At the top is the OpenTopography logo and a navigation menu with links: HOME, ABOUT, DATA, TOOLS, LEARN, and COMMUNITY. The main heading is 'myOpenTopo Authorizations'. Below it is a section titled 'User Access Levels'. Under this section, there is a list of user types:

1. Guest Users:
 - Access to 50 million points per point cloud & processing job
 - Guests do not have access to the personalized point cloud and raster jobs interface which allows you to view all previously submitted jobs, share job results and resubmit jobs

Scroll down to the bottom to request permission to submit data to the Community Dataspace:



The screenshot shows a form titled 'Request permission to submit data to the Community Dataspace'. The form contains the following text:

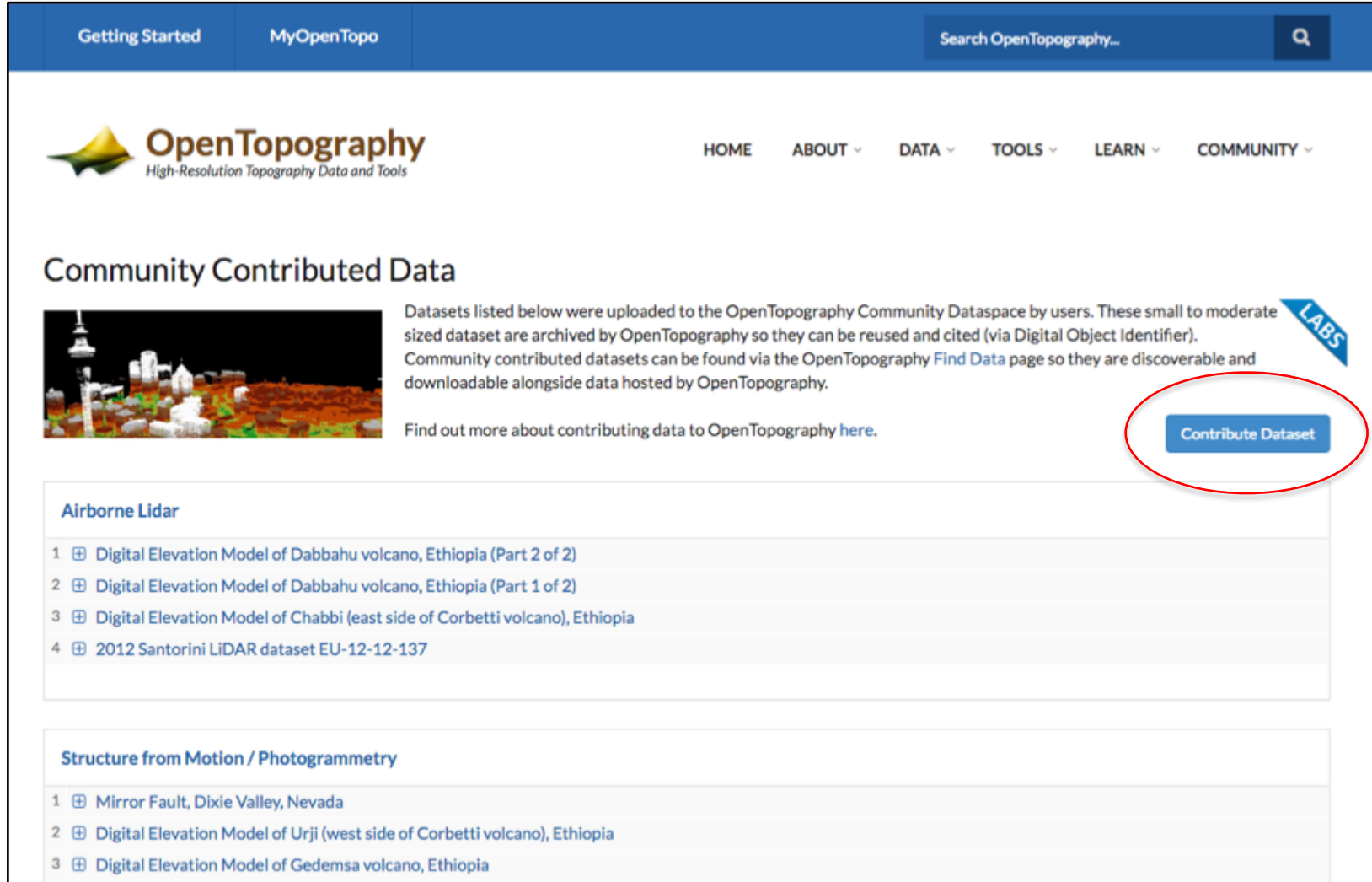
The OpenTopography Community Dataspace allows users who are producing small to moderate sized topographic datasets (with technologies such as lidar or photogrammetry) to archive their data with OpenTopography via a simple drag and drop user interface. This feature is designed to support data publication and citation, academic data reuse, and educational applications. Each submission is reviewed by OpenTopography staff and approved on a case-by-case basis. We reserve the right to reject submissions that are not aligned with the mission of OpenTopography or our funders. The Dataspace is meant to complement standard OpenTopography data hosting for larger datasets produced by our data provider partners.

Please complete the form below with a complete description of yourself and your organization, the data you'd like to contribute, funding source of the data, and why your data is relevant to the OpenTopography community. Requests lacking sufficient detail will be denied: *

Below the text is a large text input field. At the bottom right of the form is a blue button labeled 'SUBMIT'.

Once the account is set up, log into your OpenTopography account:

- Click on the “Contribute Dataset” button to start the process.



Getting Started MyOpenTopo Search OpenTopography...

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High-Resolution Topography Data and Tools

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Community Contributed Data

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Contribute Dataset

Airborne Lidar

- 1 [Digital Elevation Model of Dabbahu volcano, Ethiopia \(Part 2 of 2\)](#)
- 2 [Digital Elevation Model of Dabbahu volcano, Ethiopia \(Part 1 of 2\)](#)
- 3 [Digital Elevation Model of Chabbi \(east side of Corbetti volcano\), Ethiopia](#)
- 4 [2012 Santorini LiDAR dataset EU-12-12-137](#)

Structure from Motion / Photogrammetry

- 1 [Mirror Fault, Dixie Valley, Nevada](#)
- 2 [Digital Elevation Model of Urji \(west side of Corbetti volcano\), Ethiopia](#)
- 3 [Digital Elevation Model of Gedemsa volcano, Ethiopia](#)



Preparing your datasets for upload:

- We **strongly recommend** that all datasets be in a projected coordinate system. Only data in a projected coordinate system will be available for downstream processing (i.e. gridding of point clouds, 3D point visualization, etc.). Please make sure that the coordinate system info is included in the file header. In addition, make sure that the same coordinate system is used for all uploads (i.e. don't mix different coordinate systems in a single submission).
- Point cloud data should be compressed into LAZ format to reduce file sizes. This can be done with LAStools, PDAL, and other point cloud processing software packages. Also, do not submit a single Large LAZ file. **If a file is larger than 1 GB, it probably should be tiled into smaller, tiled LAZ files.**
- For compressing DEMs, we recommend the "deflate" algorithm. It provides more compression than LZW (although LZW is also fine). To create a compressed COG (Cloud Optimized GeoTIFF) in GDAL (V3.1 and later) you would use a command like this:
gdal_translate -of COG -co "COMPRESS=DEFLATE" inputDEM.tif outputDEM_COG.tif
- For orthoimagery, using JPEG compression REALLY helps, so we recommend the following GDAL command (V3.1 and later) to compress your ortho imagery:
gdal_translate -of COG -co "COMPRESS=JPEG" -co "PHOTOMETRIC=YCBCR" input.tif output_COG.tif

The JPEG compression drastically reduces file sizes, but only use it on orthoimagery. **Don't use JPEG compression on DEMs.** More details on orthophoto compression are in Paul Ramsey's blog post here: <http://blog.cleverelephant.ca/2015/02/geotiff-compression-for-dummies.html>

Step 1:

- Give your dataset a name. **This title will be used in your data citation**, so make it unique and descriptive. It's best to follow a template of “*Measured Feature, Location, Date*” For example: “*Survey of Ozaukee South Beach Bluff, Wisconsin, May 2018*”
- Choose the collection platform that was used to collect your dataset.
- Check the appropriate box if your dataset contains Point Clouds, Rasters, or both.
- Select “Next” when done.

OpenTopography Dataspace: Add Dataset

Step 1 of 4: Basic Information

Dataset Name *

TEAM lidar data over La Selva, Costa Rica 2009

Collection Platform *


- ✓ Airborne Lidar
- Terrestrial Laser Scanner
- Structure from Motion / Photogrammetry (SfM)

☒ Point Cloud ☐ Raster

NEXT

Step 2:

- For each file type, upload the appropriate files.
- Point Clouds: We currently only accept LAS or LAZ formats. LAZ formats are preferred as they reduce file size drastically, and will reduce upload times. **We strongly recommend that all datasets be in a projected coordinate system. Only data in a projected coordinate system will be available for downstream processing (i.e. gridding of point clouds, 3D point visualization, etc.) Please make sure that the coordinate system info is included in the header.**
- Rasters: We currently only accept IMG or TIF files. **Please make sure that the coordinate system info is included in the header.** If feasible, use the same coordinate system for both the raster and point cloud products.
- Metadata: The metadata document must be in PDF format. Users are free to use whatever format they wish, but it is preferable if the OpenTopography template is used. The template is available on the data upload pages.

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OpenTopography Dataspace: Add Dataset

Step 2 of 4: Data Upload

[Notes](#)

Point Cloud Upload

Add files or drag and drop files here to upload. (Only las/laz)

[Choose Files](#)

Raster Upload

Add files or drag and drop files here to upload. (Only: img/tif)

[Choose Files](#)

Metadata Documents Upload (Optional)

Add files or drag and drop files here to upload. (Only pdf)

[Choose Files](#)



OpenTopography Dataspace: Add Dataset

Step 2 of 4: Data Upload

 [Notes](#)

Point Cloud Upload

Add files or drag and drop files here to upload. (Only las/laz)

[Choose Files](#)

Raster Upload

Add files or drag and drop files here to upload. (Only: img/tif)

[Choose Files](#)

Metadata Documents Upload (Optional)

Add files or drag and drop files here to upload. (Only pdf)

[Choose Files](#)

Notes:

- Click on the “Notes” link for guidance on upload requirements.
- Users can upload multiple files through the “Choose Files” button, or by dragging and dropping files.
- Although there is a 10GB limit on a single submission, if a project is larger than 10GB, it should be broken into parts and submitted with part numbers designated clearly.

Notes

- The maximum file size for uploads per dataset is **10 GB**.
- The maximum each file size for uploads is **2 GB**.
- Supported formats for point cloud are **LAS, LAZ**.
LAZ is recommended due to smaller file sizes and thus shorter upload times
- Supported formats for raster data are **IMG, TIF**.
- Supported formats for SfM Images are **JPG, JPEG, PNG, DNG**.
- Supported formats for Document is **PDF**.
- You may **drag & drop** files from your desktop on this webpage (if your browser is supported).
- Please do not close this window when upload is in progress. If you do, the current files uploading will be terminated.

Step 2 (continued):

- Add the files by using the “Choose Files” button or by simply dragging the files into the designated area of the window.
- When all files have been added, select the green, “Start Upload” button to begin the upload process.
- There is a “Start Upload” button for each category of file, so be sure to perform this operation for each of the sections you added.
- Note that if you have not uploaded successfully, there will be a small “x” next to the file size.

Raster Upload

Add files or drag and drop files here to upload. (Only: img/tif)

Choose Files

laselva_lidar_dtm.img

205.62 MB ✕

Start upload

Metadata Documents Upload (Optional)

Add files or drag and drop files here to upload. (Only pdf)

Choose Files

Small Footprint Lidar Metadata-1.0.1.pdf

78.65 KB ✕

Start upload

NEXT

Step 2 (continued):

- Once you select the “Start Upload” button, you will see the progress bar as each file is uploaded to the San Diego Super Computing (SDSC) server.
- When all the files have completed the upload process, select the “Next” button at the bottom of the page.

OpenTopography Dataspace: Add Dataset

Step 2 of 4: Data Upload









[Notes](#)

Point Cloud Upload

Add files or drag and drop files here to upload. (Only las/laz)

Choose Files

224.47 Mbit/s | 00:01:22 | 18.27 % | 516.99 MB / 2.83 GB


	000001.laz	2.95 MB	
	000002.laz	1.42 MB	
	000003.laz	20.59 MB	
	000004.laz	10.29 MB	

**Step 3:**

- This step validates the input data. The amount of time this requires will depend on the size, and amount files uploaded.
- The progress of the validation is displayed on the website as seen below.

OpenTopography Dataspace: Add Dataset

Step 3 of 4: Data Validation

Your files are being verified and processed. Depending upon the size of your dataset, this process may take some time to complete. Please do not close this window until this process completes. 

Raster Data

 laselva_lidar_dtm.img	Waiting
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Point Cloud

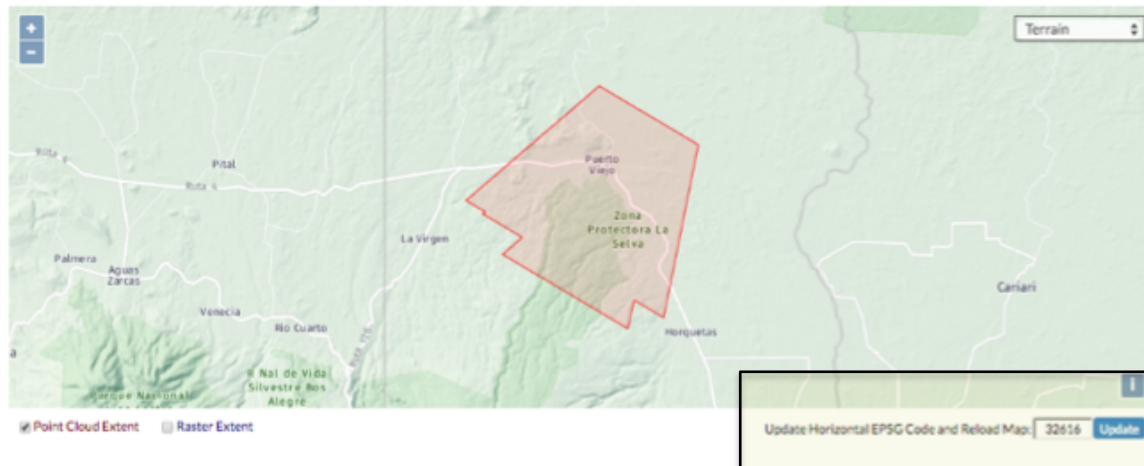
✓ 000001.laz	Done
✓ 000002.laz	Done
✓ 000003.laz	Done
✓ 000004.laz	Done
✓ 000005.laz	Done
✓ 000006.laz	Done
 000007.laz	Scanning
 000008.laz	Waiting
 000009.laz	Waiting
 000010.laz	Waiting
 000011.laz	Waiting
 000012.laz	Waiting



OpenTopography Dataspace: Add Dataset

Step 4 of 4: Metadata Information

Spatial Extent

[Show Data Files](#)

Dataset Information

We have extracted some metadata from the files you uploaded. Please complete the fields below with additional metadata and descriptive information for your dataset.

Dataset Name *	TEAM lidar data over La Selva, Costa Rica 2009
Overview Description *	
Data Products	Point Cloud, Raster
Collection Platform	Airborne Lidar
Horizontal Coordinates	WGS 84 / UTM zone 16N
Vertical Coordinates	
Horizontal EPSG Code *	32616

Step 4:

- If the validation completes successfully, a page will load that shows a map with the total spatial coverage of all the datasets in red.
- There will also be a series of text boxes to add additional information about the datasets.
- Required fields are marked with a red asterisk.
- If the map does not show the footprint locations, it could mean that either the data did not have proper coordinate system information, or it was not recognized on ingest. If you know the EPSG code of the data, you can enter this code in the box below the map to update the coordinate reference system.

**Step 4 (Continued):**

- Clicking on the “Show Data Files” bar will show a list of the files that were ingested and some basic statistics on each file.
- Clicking on the “View Detail” button will display additional metadata for each file.

[Show Data Files](#)

Point Cloud

	File Name	Size	Points	Area (m ²)	Density	
1	000001.laz	2.81 MB	266,523	2,038,465	0.13	View Detail

SpatialReference:

COMPDS[“unknown”,PROJCS[“WGS 84 / UTM zone 16N”,GEOGCS[“WGS 84”,DATUM[“WGS_1984”,SPHEROID[“WGS 84”,6378137.298,257223563,AUTHORITY[“EPSG”:7030”]],AUTHORITY[“EPSG”:6326”]],PRIMEM[“Greenwich”,0,AUTHORITY[“EPSG”:8901”]],UNIT[“degree”,0.0174532925199433,AUTHORITY[“EPSG”:9122”]],AUTHORITY[“EPSG”:4326”]],PROJECTION[“Transverse_Mercator”],PARAMETER[“latitude_of_origin”,0],PARAMETER[“central_meridian”,-87],PARAMETER[“scale_factor”,0.9996],PARAMETER[“false_easting”,500000],PARAMETER[“false_northing”,0],UNIT[“metre”,1,AUTHORITY[“EPSG”:9001”]],AXIS[“Easting”,EAST],AXIS[“Northing”,NORTH],AUTHORITY[“EPSG”:32616”]],VERT_CS[“unknown”,VERT_DATUM[“unknown”,2005],UNIT[“metre”,1.0,AUTHORITY[“EPSG”:9001”]],AXIS[“Up”,UP]]]

Lat/Lon/Elevation Boundary:

North-East (lat,lon,elev): [10.47499269, -83.98575375, 83.82]
South-West (lat,lon,elev): [10.47039235, -83.98955912, 44.99]

Coordinates Boundary:

North-East (X,Y): 829999.99, 1159505.41]
South-West (X,Y): 829587.81, 1159000.0]

Classifications:

Class 1 (Unclassified): 162,844
Class 2 (Ground): 103,636
Class 9 (Water): 43

2	000002.laz	1.35 MB	260,580	112,604	2.31	View Detail
3	000003.laz	19.64 MB	1,712,529	13,153,973	0.13	View Detail
4	000004.laz	9.81 MB	864,681	4,099,597	0.21	View Detail
5	000005.laz	168.60 KB	40,859	35,132	1.16	View Detail
6	000006.laz	8.51 MB	1,670,955	760,964	2.2	View Detail
7	000007.laz	12.48 MB	2,434,029	952,564	2.56	View Detail


**Step 4 (Continued):**

- Clicking on the map pin icon on the right hand side of each file listing will update the map to show the spatial extent of that file colored in green.
- Clicking on the garbage can icon will delete a file from the collection.

OpenTopography Dataspace: Add Dataset

Step 4 of 4: Metadata Information

Spatial Extent







☒ Point Cloud Extent ☐ Raster Extent

Update Horizontal EPSG Code and Reload Map: 32616 [Update](#)

Show Data Files

Point Cloud

	File Name	Size	Points	Area (m ²)	Density	
1	000001.laz	2.81 MB	266,523	2,038,465	0.13	View Details  
2	000002.laz	1.35 MB	260,580	112,604	2.31	View Details  

**Step 4 (Continued):**

- It is best practice to provide as much information about the dataset as possible, so make an effort to fill in all applicable fields.
- Project Roles and Contributors can be added to help provide contact information. After adding a contributor, a green check mark will display to show that the user or organization has been added successfully.

Project Roles & Data Contributors

Main Contributor ☒ Person ☐ Organization

First Name: *

Middle Name

Last Name: *

Email *

Role

Organization

[+ Add Additional Contributor](#)

Additional Contributor ☐ Person ☒ Organization

Role

Organization *

[Add this contributor](#) [Cancel](#) ✓

[SUBMIT DATASET](#) [SAVE PROGRESS](#) [DELETE DATASET](#)

**Step 4 (Continued) Final Submission:**

- Use the “Save Progress” button to save work, but delay submitting the dataset for another time.
- When all the data entry is completed, and the dataset is ready for final submission, select the “Submit Dataset” button. The page will refresh and display a banner at the top that states that the dataset has been successfully submitted and is pending OpenTopography approval.
- You are done! Once an OpenTopography team member reviews the submission, an email will be sent to your account with a link to verify the data submission and display the data home page.

Project Roles & Data Contributors

Main Contributor ☒ Person ☐ Organization

First Name: *

Middle Name

Last Name: *

Email *

Role

Organization

[+ Add Additional Contributor](#)

Additional Contributor ☐ Person ☒ Organization

Role

Organization *

[Add this contributor](#) [Cancel](#) ✓

[SUBMIT DATASET](#) [SAVE PROGRESS](#) [DELETE DATASET](#)



Tips and Troubleshooting:

- Use LAZ files when possible. The compression drastically reduces file sizes, and will speed up the whole process.
- When appropriate, verify that files have coordinate system information in the header.
- If uploads are taking a long time, or have stalled, the process may have still completed. Users can check the status of the upload by going to MyOpenTopo → Contribute → “View and manage my community Dataspace datasets” (see image below). Select the edit button next to the project of interest, and verify that all the files are uploaded and have correct statistics.

The screenshot shows the OpenTopography web application interface. At the top, there is a navigation bar with links for HOME, ABOUT, DATA, and TOOLS. Below the navigation bar, a welcome message is visible. A blue banner indicates the number of jobs currently running. The main content area is divided into three sections: Data, My Account, and Contribute. The Contribute section contains a list of actions, with the second item, 'Contribute a Dataset', highlighted by a red box. Within this box, the link 'View and manage my community Dataspace datasets' is also highlighted by a red box and an arrow.

OpenTopography

HOME ABOUT DATA TOOLS

Welcome Matthew Bentley

Jobs currently running on OpenTopography: 1 (Point Cloud jobs: 1)

Data

1. [Point Cloud Jobs](#): View currently submitted and previous point cloud jobs.
2. [Raster Jobs](#): View currently submitted and previous raster jobs.
3. [Vertical Differencing Jobs](#): View currently submitted and previous vertical differencing jobs.
4. [User Jobs Statistics](#): Overview of your processing jobs statistics.
5. [myPrivate Datasets](#) [1]

My Account

1. [myOpenTopo Authorizations](#): View your OpenTopography account authorization levels and request enhanced permissions.
2. [Update Profile / Change Password / Customize processing services](#)

Contribute

1. [Contribute a Tool](#): Contribute a tool to the OpenTopography Registry.
2. [Contribute a Dataset](#): Contribute data via the OpenTopography Community Dataspace [Dataspace user only].
 - [View and manage my community Dataspace datasets](#) [1]

**Tips and Troubleshooting (continued):**

- When working with TLS data, sometimes errors can occur in the upload because the distribution of points between the files is very uneven – e.g. files containing points near the scan-center will have MUCH larger point counts than files containing points far from the scanner. This large discrepancy in file sizes can cause errors when uploading to the Dataspace. The easiest solution right now is to split the data using lassplit from the LAStools package (<https://rapidlasso.com/lastools/>). The following command can be used:

```
lassplit -v -i input.laz -o output_tile.laz -digits 2 -split 25000000
```

This splits the the laz file into files with 25,000,000 points in each file. The "digits" keyword is just telling the software to increment the filenames by 2 digits, so output filenames will be in the form: output_tile00.laz,output_tile01.laz, etc.

- Note that if there is still an uneven distribution of points between the files, it may be necessary to manually split the files, with the XY location of the scanner as the split location. This can be accomplished by using the las2las command, and manually specifying the XY range of the data to include in each file. Using the “-keep_xy” keyword enables the ability to cut out data for a specified XY range. For example:

```
las2las -i input.laz -o output.laz -keep_xy 350601 4752322 351021 4752696
```

**Tips and Troubleshooting (continued):**

- For citation of datasets contributed to the Community Dataspace, a citation will be automatically generated in the following format:

PI's lastname, PI's first/middle initials. (public release year): Title of dataset collection. Distributed by OpenTopography. link to DOI. Date of Data Access.

Examples:

Hiscock, A. (2019). 2019 ZigZag Landslide Reconnaissance, Morgan County, Utah. Distributed by OpenTopography. <https://doi.org/10.5069/G96D5R4Q>. Accessed: 2020-01-22

Amatulli, G., McInerney, D., Sethi, T., Strobl, P., Domisch, S. (2020). Geomorpho90m - Global High-Resolution Geomorphometry Layers. Distributed by OpenTopography. <https://doi.org/10.5069/G91R6NPX>. Accessed: 2020-01-22

Gruetzner, C. (2019). Suusamy Basin, eastern 1992 surface ruptures, Kyrgyzstan. Distributed by OpenTopography. <https://doi.org/10.5069/G9V69GRT>. Accessed: 2020-01-22

Arrowsmith, J R., Pisciotta, F. and CERG-C (2018): Photogrammetric model of a portion of the Faraglione--a rock outcropping in the Vulcano Town area, Vulcano Island, Sicily, Italy (point cloud [17M points] and DEM [6 cm/pix]). Distributed by OpenTopography. . <https://doi.org/10.5069/G9WD3XPD> Accessed October 29, 2018