Subtract Selection



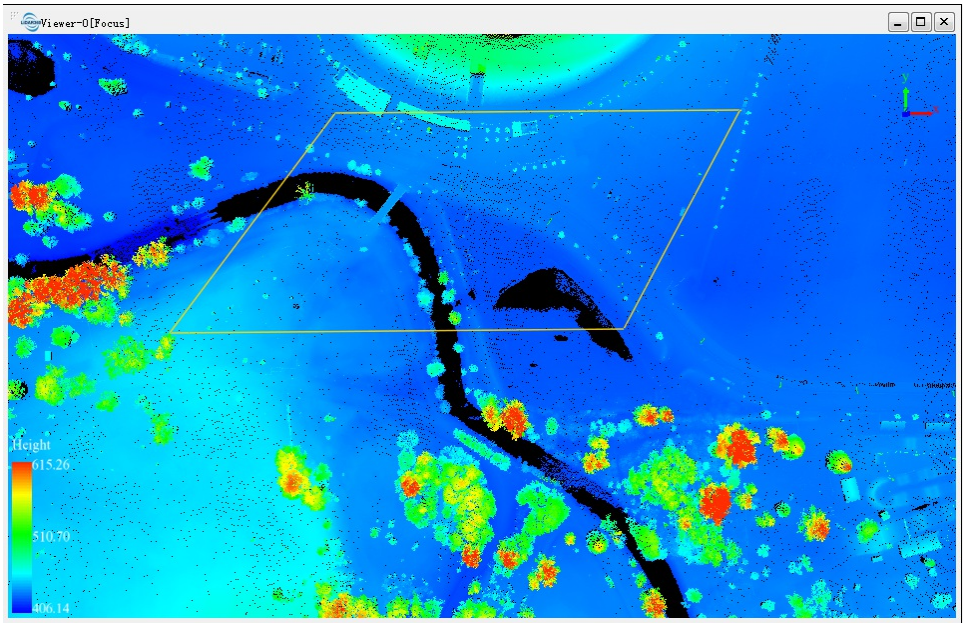
Brief: This function is effective on one of the geometric selection tools (Polygon Selection, Rectangle Selection or Sphere Selection). If *Subtract Selection* is **inactive**, more points can be added to the currently selected. If **active**, unwanted points can be removed from the currently selected.

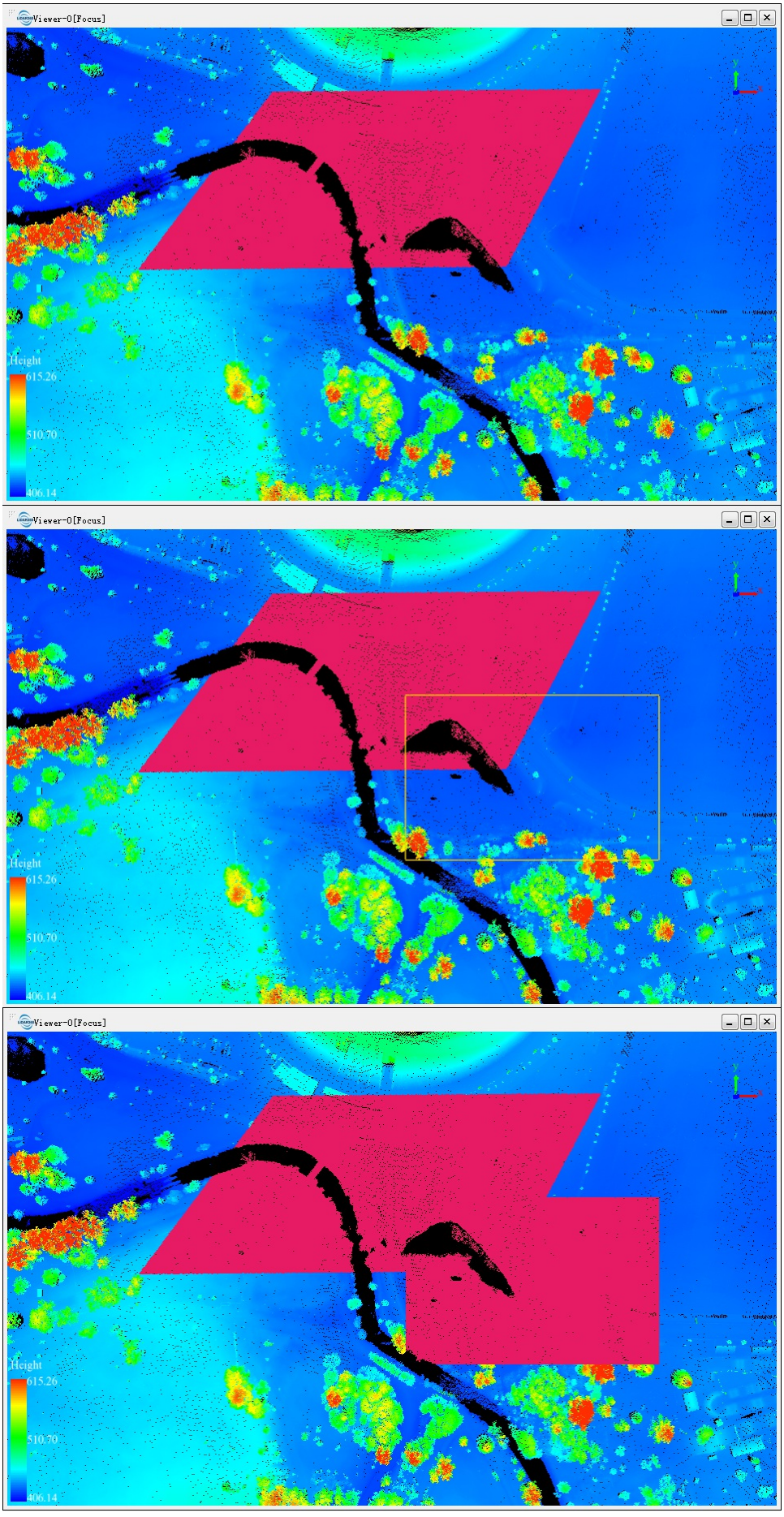
Usage

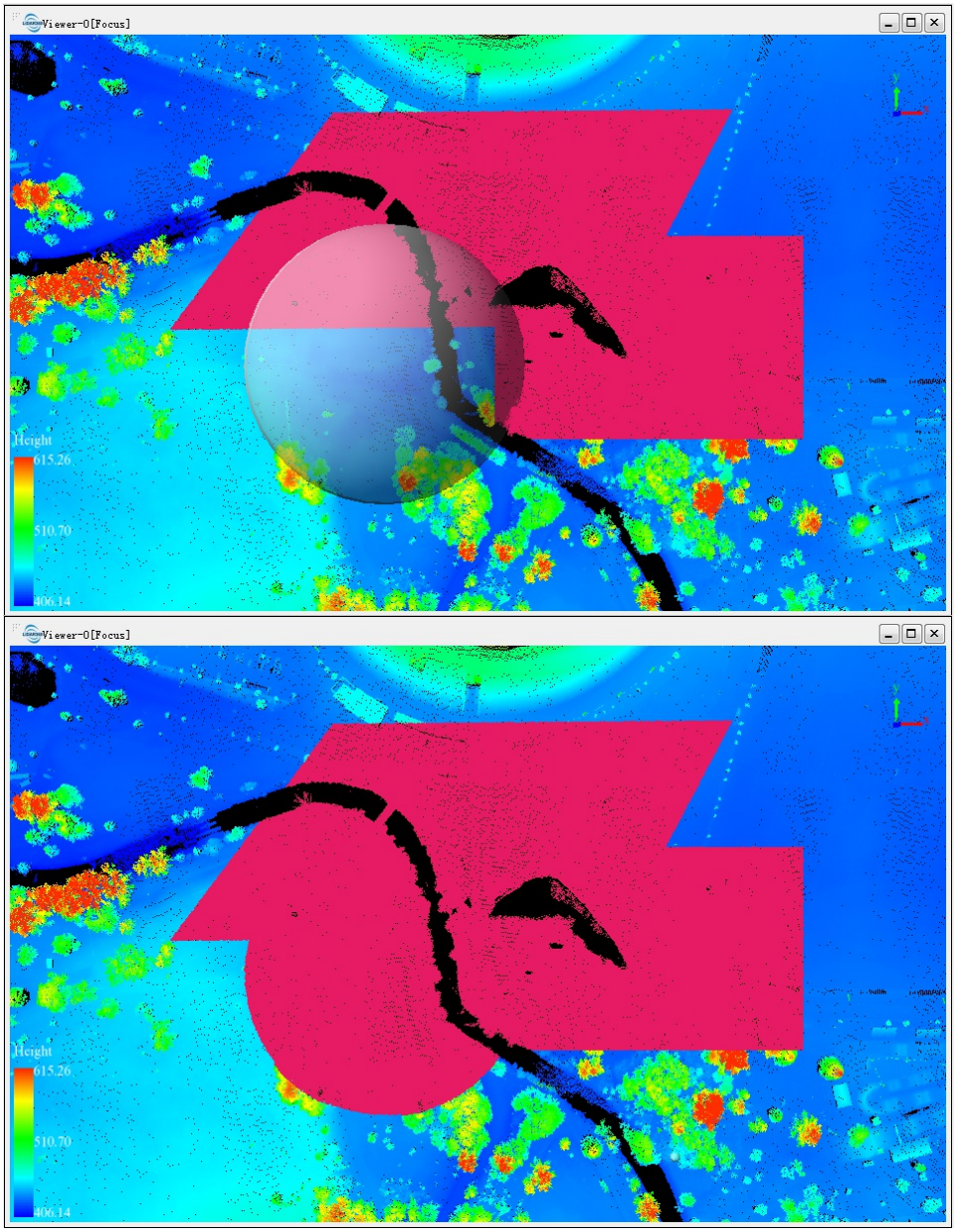
Click *Tool* > *Cut Point Cloud* > *Subtract Selection*

Steps

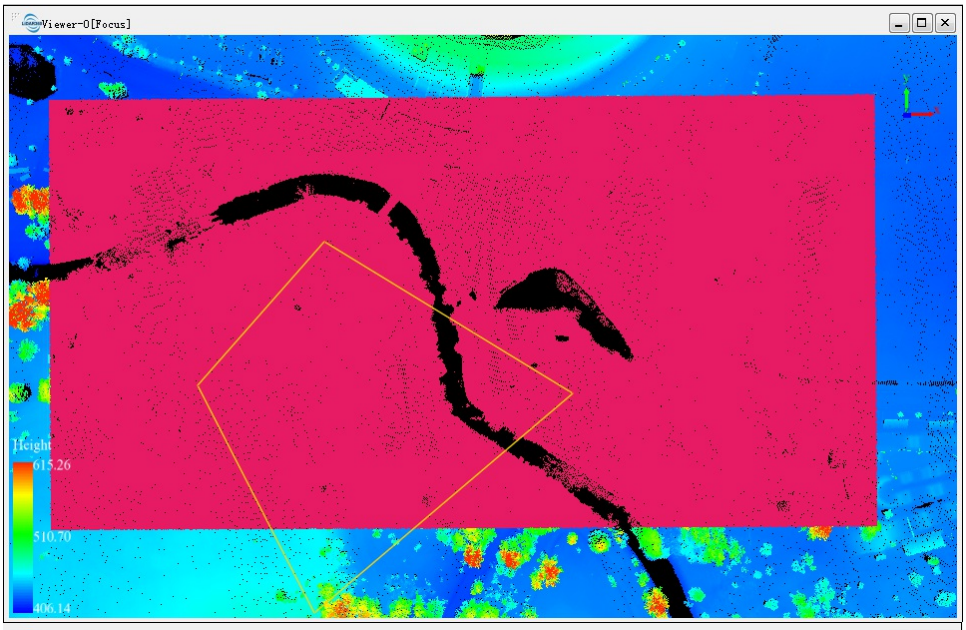
1. Activate one of the geometric selection tools (Polygon Selection, Rectangle Selection or Sphere Selection) before using *Subtract Selection*. Then please activate/deactivate *Subtract Selection* by left click.
2. **(Optional)** If *Subtract Selection* is **inactive**, multiple selections can be combined.

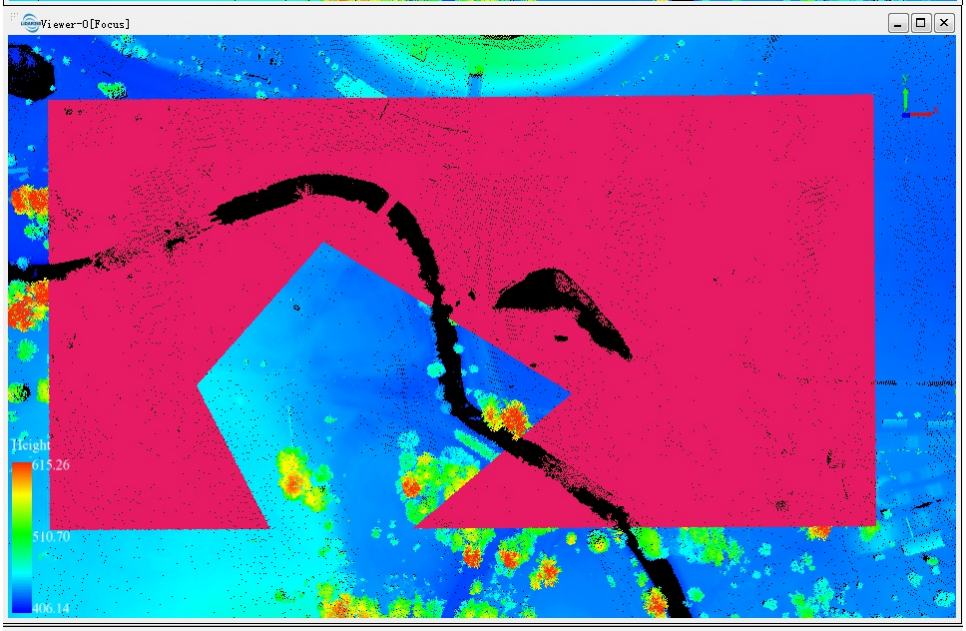


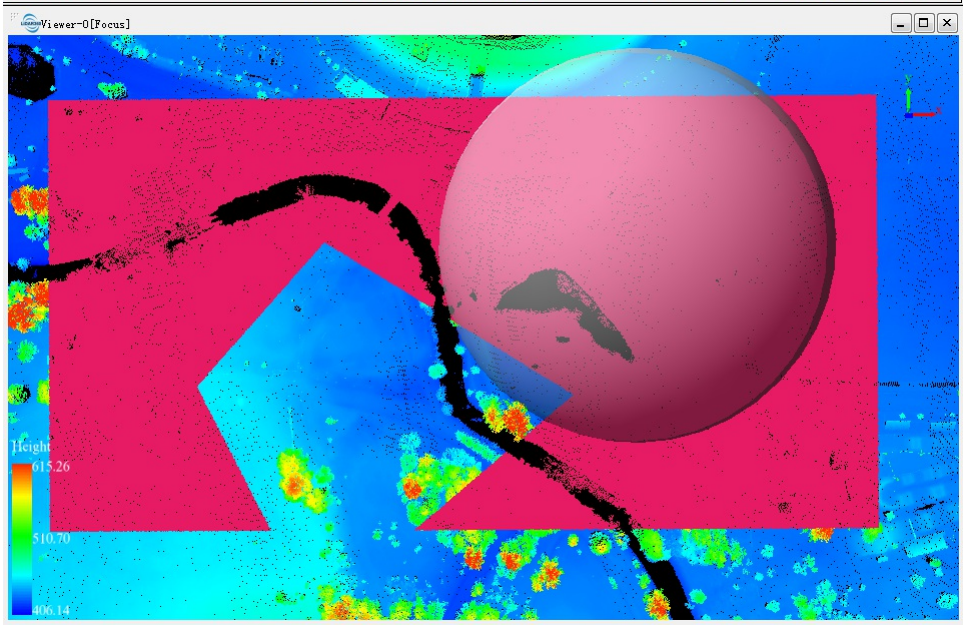

Viewer-0[Focus]
Height
615.26
510.70
406.14
Viewer-0[Focus]
Height
615.26
510.70
406.14
Viewer-0[Focus]
Height
615.26
510.70
406.14

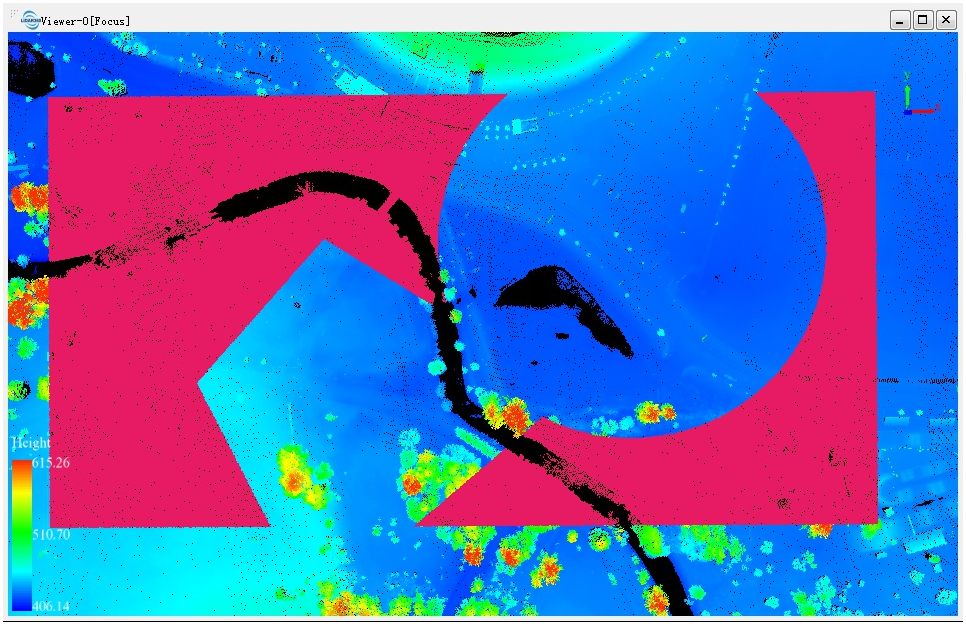


3. **(Optional)** If *Subtract Selection* is **active**, unwanted points can be removed from the currently selected.


Viewer-0[Focus]
Height
615.26
510.70
406.14


Viewer-0[Focus]
Height
615.26
510.70
406.14


Viewer-0[Focus]
Height
615.26
510.70
406.14



> **Shortcut Key**: Press **Ctrl + Z** to undo the last operation.
>
> Note: This function is only applicable to point cloud data.

In Cut



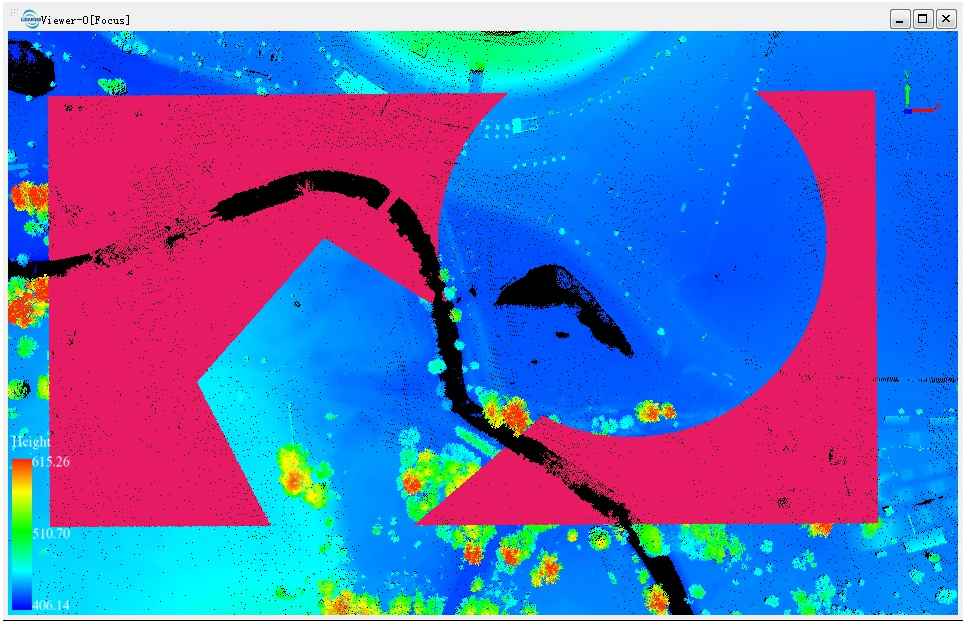
Brief: Cut point clouds after selection. The selected points are kept while the unselected are hidden.

Usage

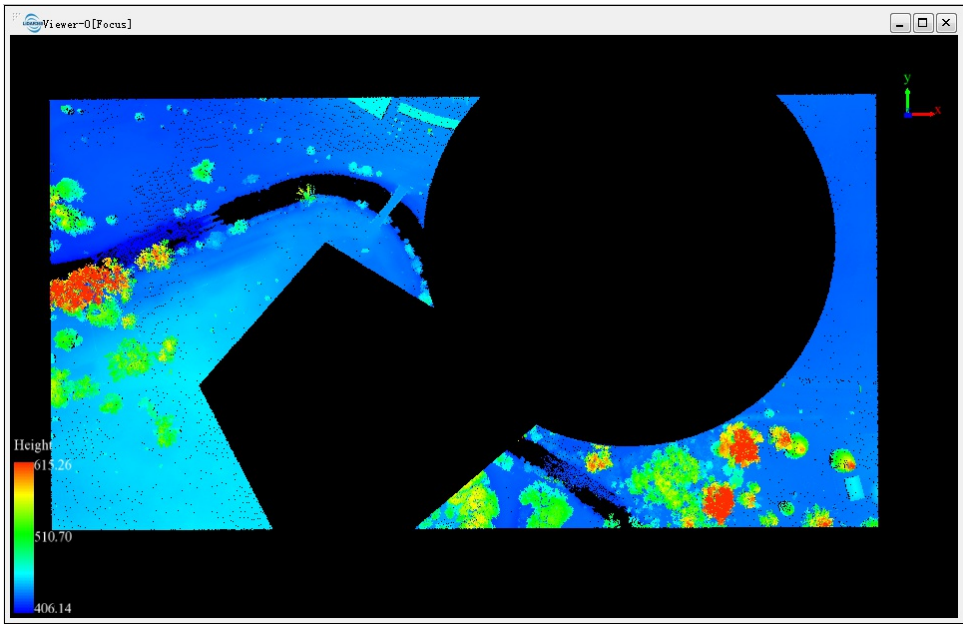
Click *Tool* > *Cut Point Cloud* > *In Cut*

Steps

1. Select points using Polygon Selection, Rectangle Selection or Sphere Selection. The selected points are highlighted.



2. Click the *In Cut* Button. The result is shown in the following figure.



3. **(Optional)** You can repeat this function several times to get the result you need.

> **Shortcut Key**: Press **Ctrl + Z** to undo the cut operation. The corresponding selection is also cancelled.
>
> Note: This function is only applicable to point cloud data.

Out Cut



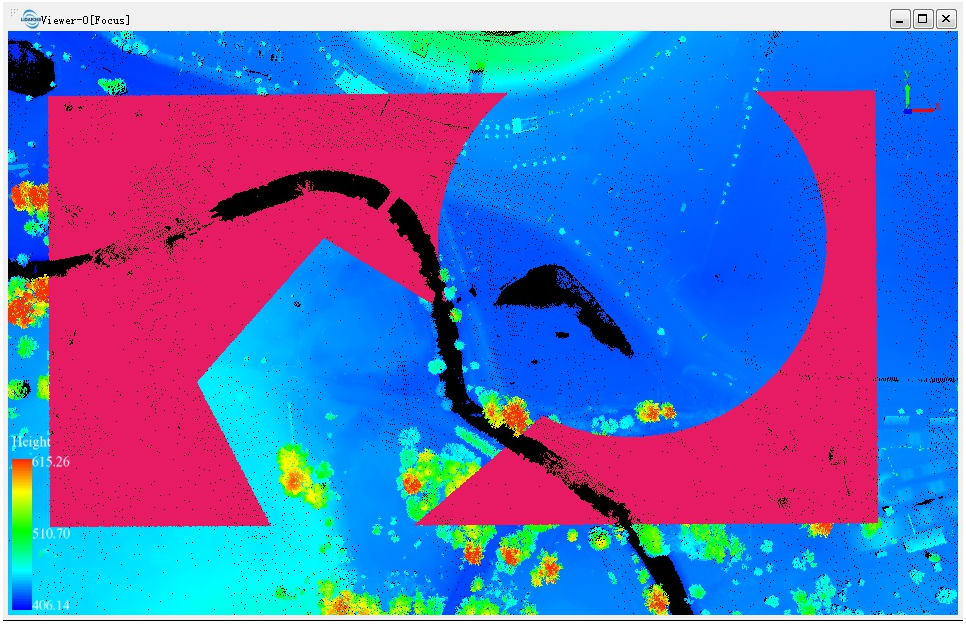
Brief: Cut point clouds after selection. The selected points are hidden while the unselected are kept.

Usage

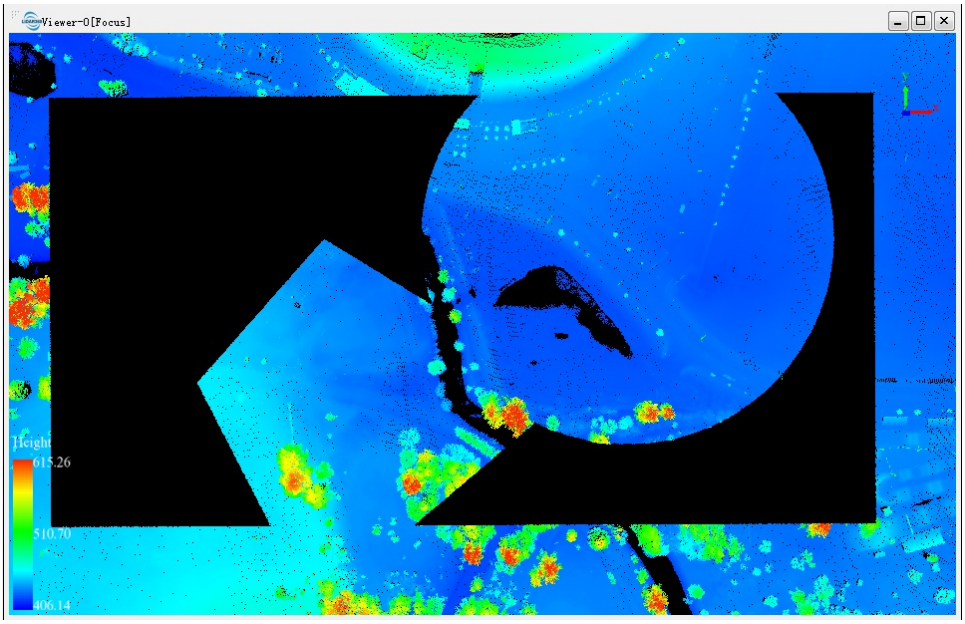
Click *Tool* > *Cut Point Cloud* > *Out Cut*

Steps

1. Select points using Polygon Selection, Rectangle Selection or Sphere Selection. The selected points are highlighted.



2. Click the *Out Cut* Button. The result is shown in the following figure.



3. **(Optional)** You can repeat this function several times to get the result you need.

> **Shortcut Key**: Press **Ctrl + Z** to undo the cut operation. The corresponding selection is also cancelled.
>
> Note: This function is only applicable to point cloud data.

Save Cut Results



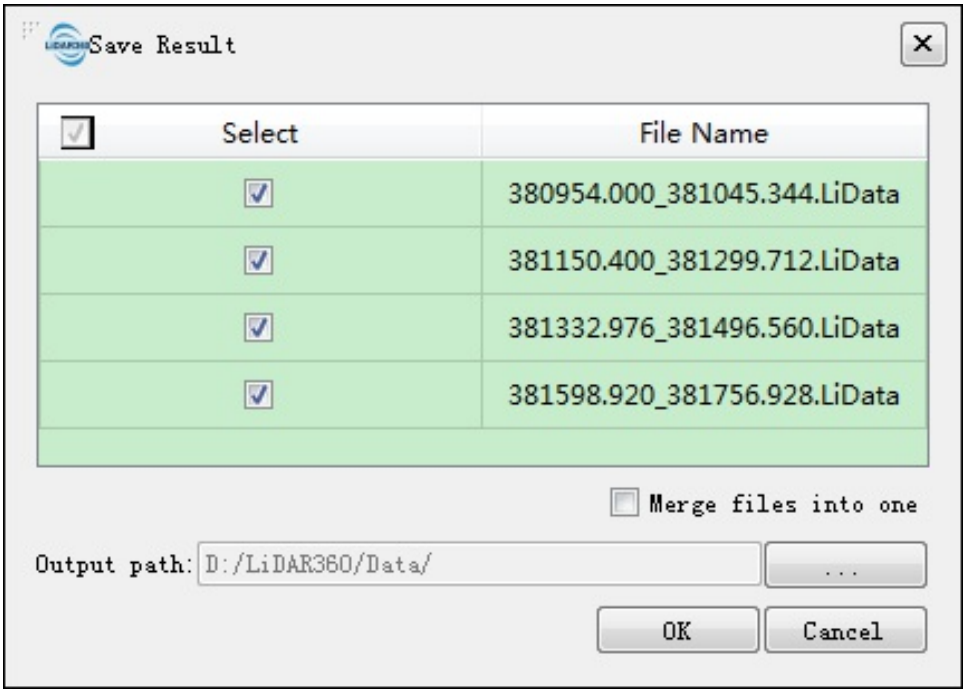
Brief: Save results after cut operation as new point cloud files.

Usage

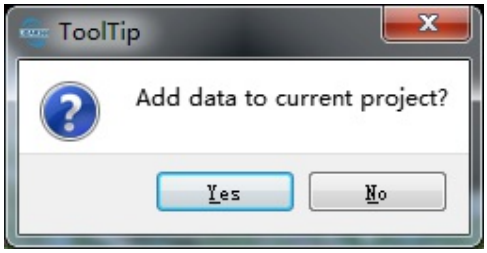
Click *Tool* > *Cut Point Cloud* > *Save Cut Results*

Steps

1. Click this button after successful cut operations(In Cut, Out Cut). An interface is shown as follows.



2. Select source point cloud files, from which new files are generated.
3. **(Optional)** Check/Uncheck the option "*Merge files into one*" according to demand.
4. Specify the output path. New file names are created based on the source file names and system time. An example of new file name is "*SourceFileName*_CutResult_*SystemTime*.LiData".
5. After data saving, a dialog will ask if you want to add the new files to current project.



6. Click *Yes* or *No* according to demand.

Cancel Selection



Brief: Cancel all the selections and cut operations.

Usage

Click *Tool* > *Cut Point Cloud* > *Cancel Selection*

Steps

1. Click this button after selections(Polygon Selection, Rectangle Selection, Sphere Selection) or cut operations(In Cut, Out Cut). All the selections and cut operations will be cancelled.

> Note: This function is only applicable to point cloud data.

Project Management Window

The data list in the project is managed by layers and windows separately.

- Layer Management
  - Point Cloud
  - Raster
  - Vector
  - Table
  - Model
  - Gaussian Splats
- Window Management

> Note: The data loaded into the project can be displayed in single/multiple window(s), or not displayed at all. Please drag data to a certain window for display.

Layer Management

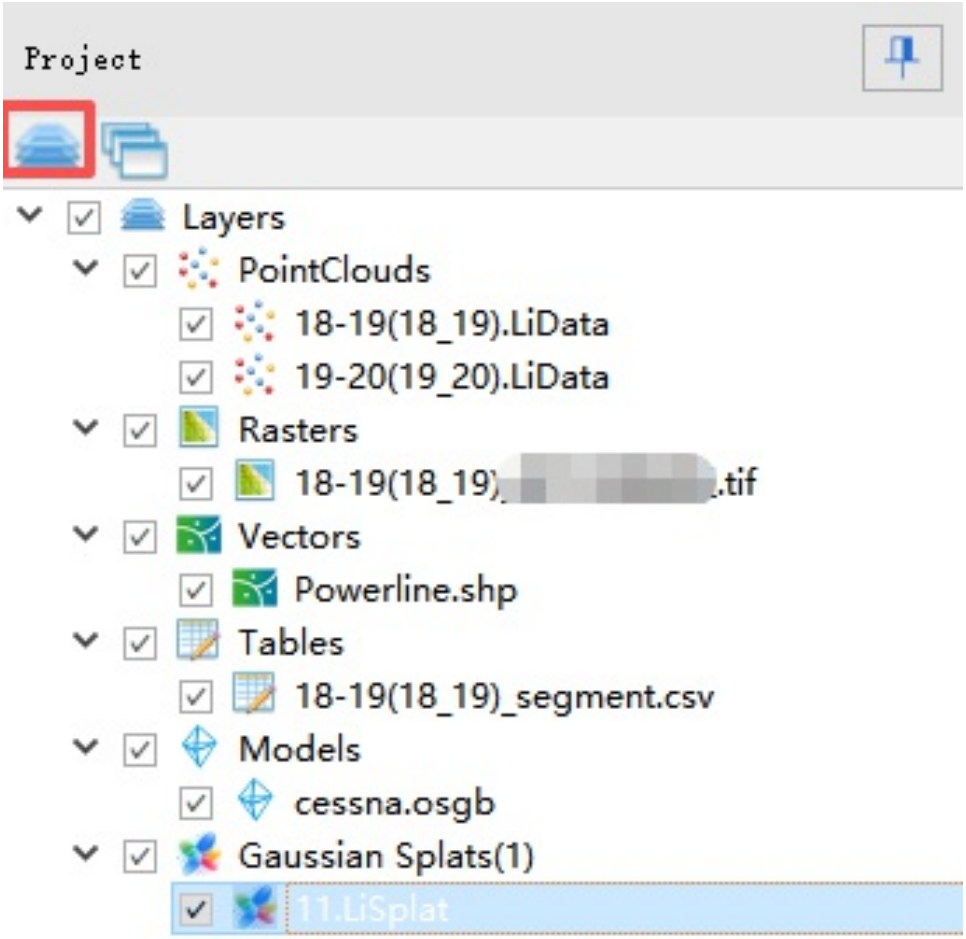
Brief

The **project layers** manage the data in the software by group, whose types include **Point Cloud**, **Raster**, **Vector**, **Table**, and **Model**.

- **Point Cloud**: Proprietary LiData File(*.LiData), LAS File(*.las,*.laz), ASCII File(*.txt,*.asc,*.neu,*.xyz,*.pts,*.csv);
- **Raster**: Image File(*.tif,*.jpg);
- **Vector**: Vector File(*.shp);
- **Table**: Table File(*.csv);
- **Model**: Proprietary Model File(*.LiModel), Proprietary TIN File(*.LiTin), OSG Model File(*.osgb,*.ive,*.desc,*.obj);
- **Gaussian Splats**: Gaussian Model(*.LiSplat,*.ply,*.xml);

In the **project layers** the user can remove data from the software, show/hide data in all windows by checking/unchecking the box before data node (or data type node). The data can be dragged from data node to different windows for display. The context menu (i.e. right-click menu) of data node, which differs depending on data types, is mainly used for data query, display, statistics, export, and removal, etc.

Click the button to show the **project layers** as follows:



Context Menu

Open the context menu by right clicking data type or data.

- Context menu of point cloud
- Context menu of raster
- Context menu of vector
- Context menu of table
- Context menu of model
- Context menu of gaussian splats

> Note: The context menu of layer management is effective on all windows, while the context menu of window management is only effective on specified window.

Point Cloud Context Menu

Brief

The context menus are used to for data import, removal, query, display, statistics, export, etc.

Data Type Context Menu

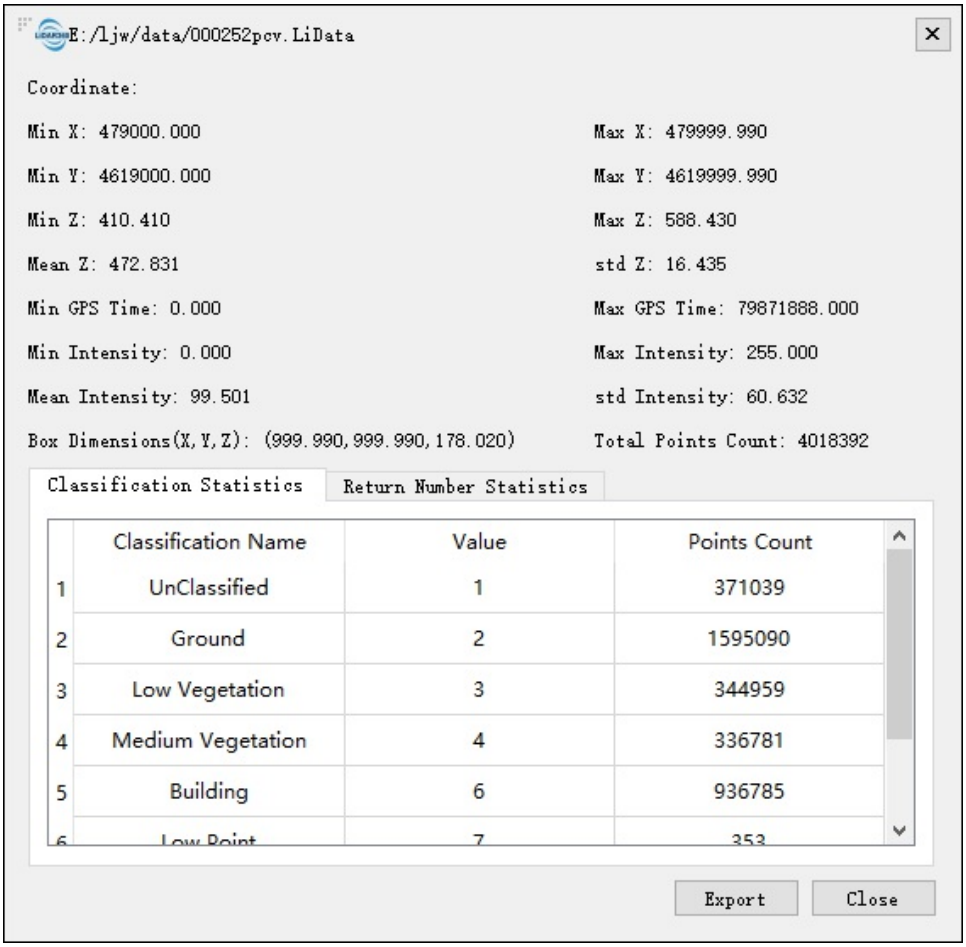
The user can open this menu by right clicking the point cloud data type.

- **Import Data**: The point cloud data formats supported by LiPowerline include LiData (*.LiData), LAS (*.las, *.laz), ASCII (*.txt, *.asc, *.neu, *.xyz , *.pts, *.csv) and PLY (*. ply). The LiData is the proprietary point cloud data format, on which the point cloud processing are based. Other imported formats of LAS, ASCII and PLY will be converted to LiData for subsequent processing. This function is the same as the tool Add Data.
- **Remove All**: Remove all the point cloud data from the project.

Data Context Menu

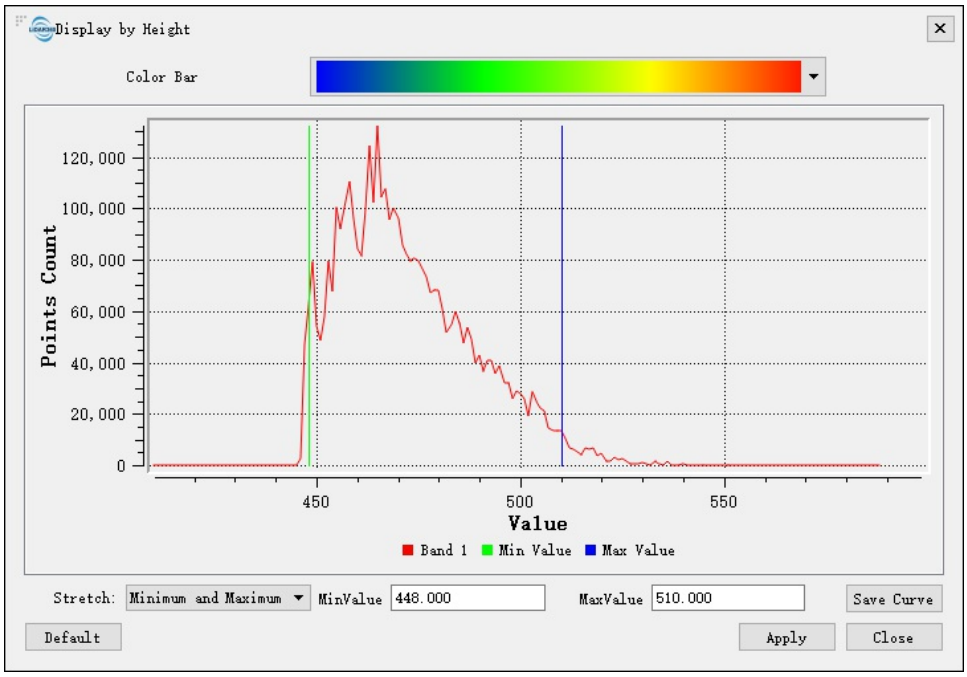
The user can open this menu by right clicking a point cloud data object.

- **Info**: View the basic information of point cloud data as shown below. Click the *Export* button to export the information as a *.txt file.

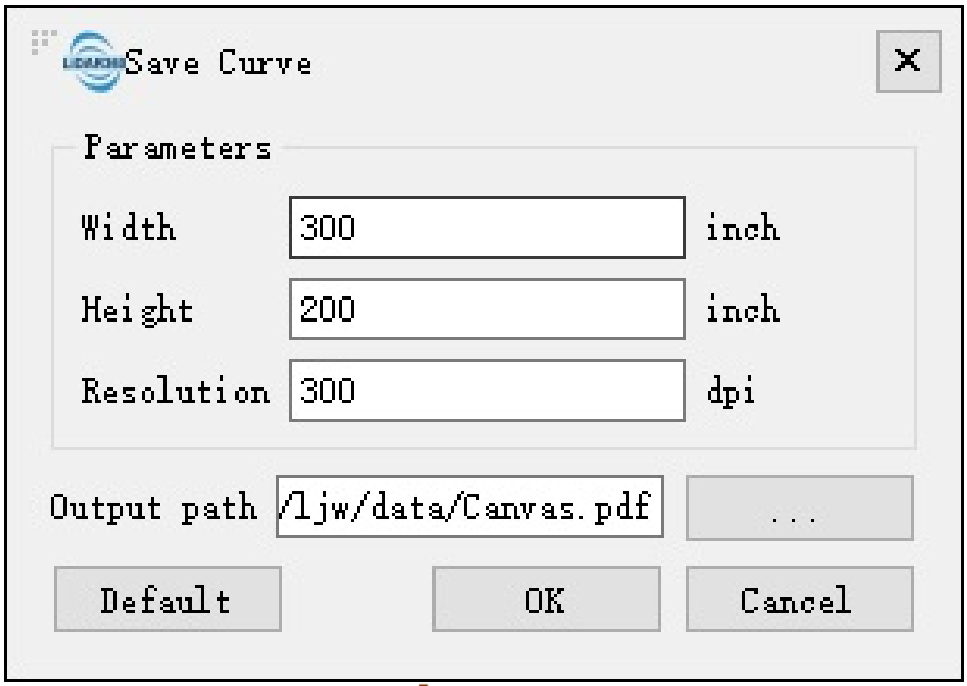


- **View Mode**: Select the display mode of point cloud data between the following types.

- **Display by Height**: The interface is shown as follows. The value range of display can be stretched by minimum/maximum or standard deviation in order to improve the visual effects.

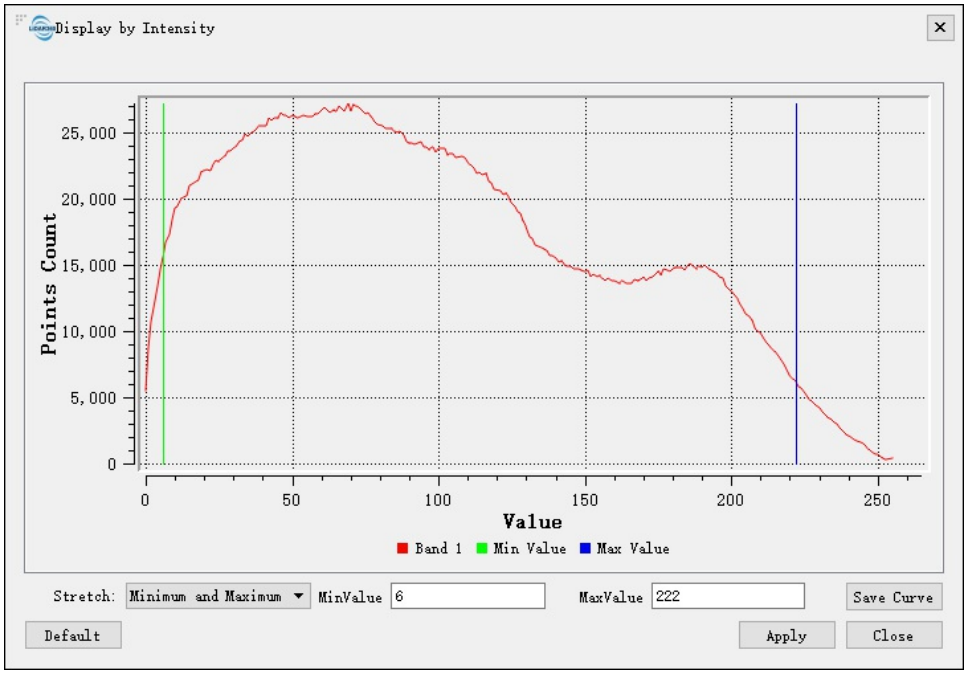


The curve can be saved in *.pdf format. Click the button "Save Curve" to pop up the following interface. Set the width, height, resolution, output path of the curve and click "OK" button to save the curve to local disk.

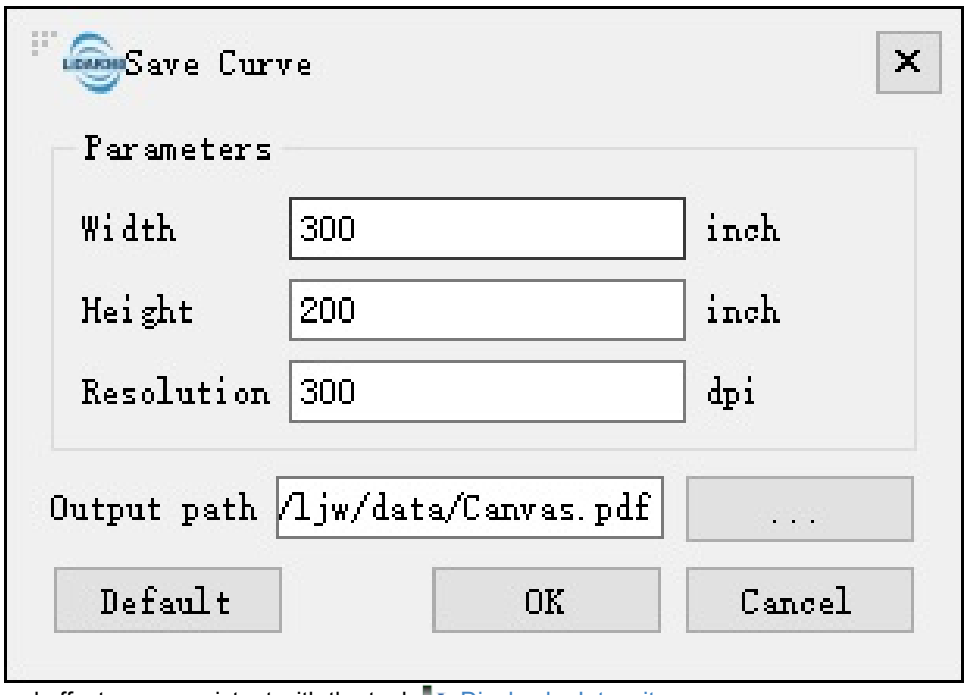


The visual effects are consistent with the tool Display by Elevation.

- **Display by Intensity**: The interface is shown as follows. The value range of display can be stretched by minimum/maximum or standard deviation in order to improve the visual effects.

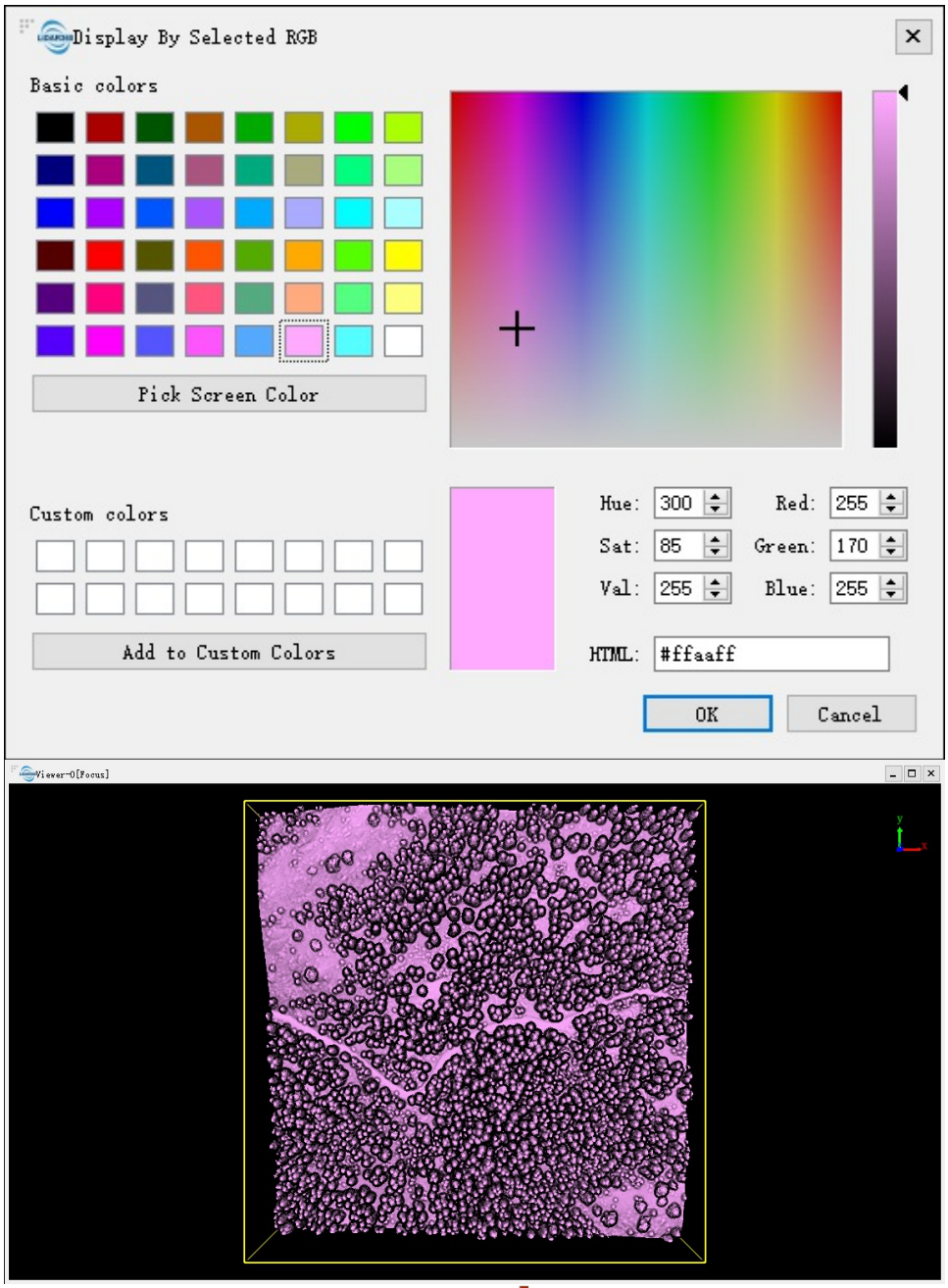


The curve can be saved in *.pdf format. Click the button "Save Curve" to pop up the following interface. Set the width, height, resolution, output path of the curve and click "OK" button to save the curve to local disk.



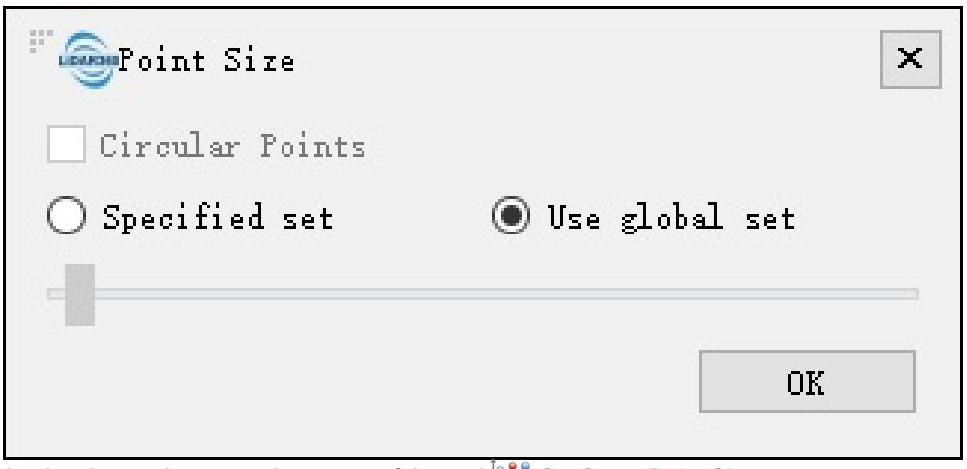
The visual effects are consistent with the tool I Display by Intensity.

- **Display by Class**: This function is the same as the tool C Display by Class.
- **Display by RGB**: This function is the same as the tool RGB Display by RGB.
- **Display by Return**: This function is the same as the tool R Display by Return.
- **Display by Time**: This function is the same as the tool T Display by Time.
- **Display by TreeID**: This function is the same as the tool ID Display by TreeID.
- **Display by Selected**: Select user-defined color to display the point cloud data. The interface and the visual effects are shown below.



- **Display by Blend**: This function is the same as the tool Display by Blend.
- **Display by Mix**: This function is the same as the tool Display by Mix.

- **Zoom to Layer**: Calculate the bounding box of the current point cloud data. All the windows, in which the data object is loaded, will show full extent of the bounding box.
- **Restatistics**: Recalculate the *Mean Z*, *Std Z*, *Mean Intensity* and *Std Intensity* of point cloud data. This function is used to repair older versions of LiData which may contain incomplete information.
- **Export**: Export the point cloud data to LAS (*.las, *.laz), ASCII (*.txt, *.asc, *.neu, *.xyz, *.pts, *.csv) and PLY (*.ply) format. This function is the same as the tool Export.
- **PCV**: Process the point cloud data with PCV to improve the visual effects.
- **Point Size**: The point size of each point cloud data object can be set separately or set uniformly according to the global settings. The shape of points can be set to circle or square. The interface is shown as follows.



For global point size settings, see the usage of the tool Configure Point Size.

- **Remove**: Remove the selected point cloud data from the current project. This function is the same as the tool Remove.

Settings

- **Display by Height**:
  - **Color Bar**: The colorbar supports several uniformly varying color intervals for color mapping.
  - **Stretch**: The stretch methods of the histogram.
    - **Minimum and Maximum (Default)**: Apply a linear stretch based on the minimum and maximum pixel values, with the minimum and maximum pixel values as the endpoints for the histogram. For example, the minimum and maximum pixel values of the image could be 2488 and 2656 respectively. The values can be stretched linearly between 0 and 255. Distributing pixel values over the entire histogram range, the brightness and contrast of the image are increased and features in the image are easier to distinguish.
    - **Std deviation**: Apply a linear stretch between the pixel values defined by the std deviation (n) value. For example, the minimum and maximum pixel values of the image could be 2488 and 2656 respectively. If the value of standard deviation (n) is defined as 2, then the values beyond 2 standard deviation become 0 or 255, the remaining values stretch between 0 and 255.
- **Display by Intensity**:
  - **Stretch**: The stretch methods of the histogram.
    - **Minimum and Maximum (Default)**: Apply a linear stretch based on the minimum and maximum pixel values, with the minimum and maximum pixel values as the endpoints for the histogram. For example, the minimum and maximum pixel values of the image could be 2488 and 2656 respectively. The values can be stretched linearly between 0 and 255. Distributing pixel values over the entire histogram range, the brightness and contrast of the image are increased and features in the image are easier to distinguish.
    - **Std deviation**: Apply a linear stretch between the pixel values defined by the std deviation (n) value. For example, the minimum and maximum pixel values of the image could be 2488 and 2656 respectively. If the value of standard deviation (n) is defined as 2, then the values beyond 2 standard deviation become 0 or 255, the remaining values stretch between 0 and 255.
- **Save Curve**:
  - **Width**: The width of the saved curve.
  - **Height**: The height of the saved curve.
  - **Resolution**: The resolution of the saved curve.
  - **Output path**: The output path of the saved curve.
- **Point Size**:

- **Circular Points (Optional)**: Set the shape of the point to circle or square.
- **Specified set (Optional)**: Set the point size of the specified point cloud data separately.
- **Use global set (Optional)**: Set the point size of the specified point cloud data with global settings.

Raster Context Menu

Brief

The context menus are used to for data import, removal, query, display, etc.

Data Type Context Menu

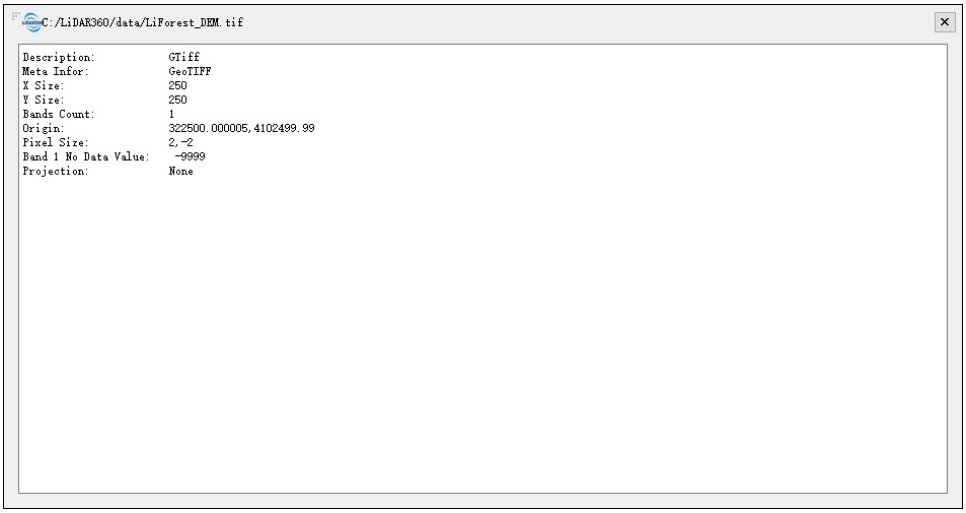
The user can open this menu by right clicking the raster data type.

- **Import Data**: The raster data formats supported by LiPowerline include TIF and JPG. The function is the same as the tool Add Data.
- **Remove All**: Remove all the raster data from the project.

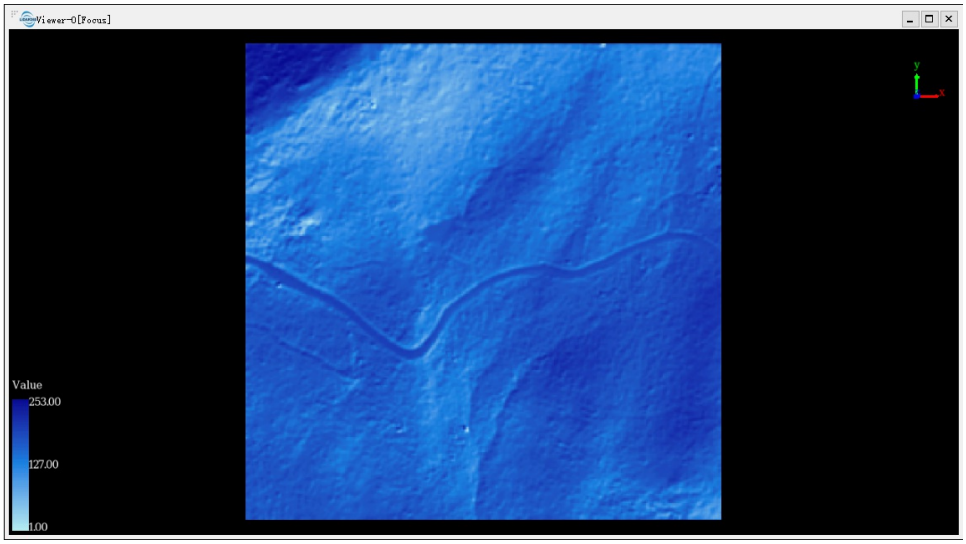
Data Context Menu

The user can open this menu by right clicking a raster data object.

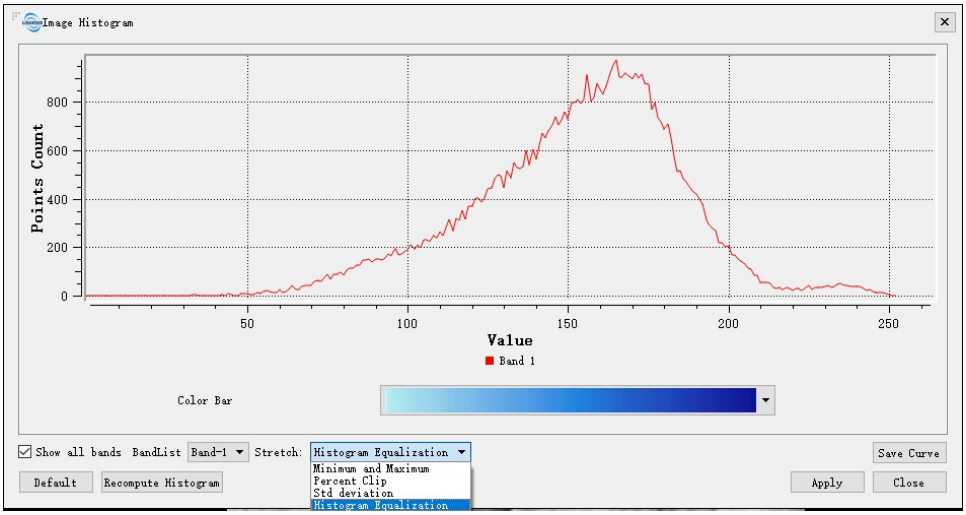
- **Info**: View the basic information of raster data, including file path, description, X size, Y size, bands count, pixel size, invalid value of each band, projection, etc. The interface is shown below.



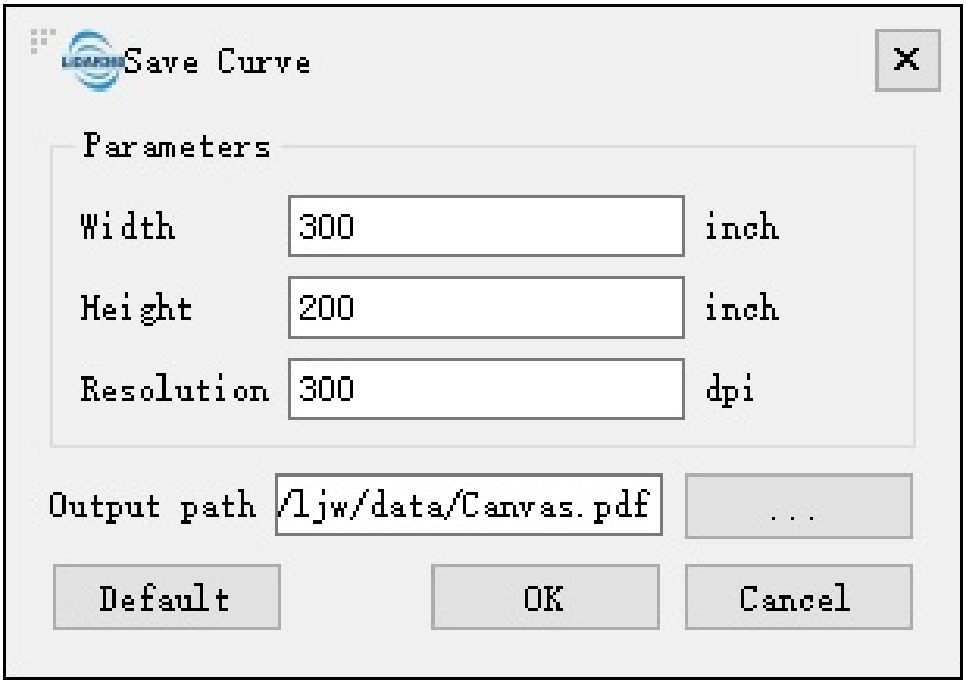
- **Histogram**: View the histogram of the raster data, where the values of each band can be stretched separately. The raster data is displayed in gray color bar by default. Select an appropriate color bar in the combo box. Click the button "Apply", the raster data in the scene will be rendered according to the above settings, as shown below.



Select the stretch method and generate the corresponding histogram, as shown below.



The button "Default" is used to restore the default settings. The button "Recompute Histogram" is used to calculate all the pixel values of the raster data again. The sampling points are 250000 by default. When the pixel size of the raster data exceeds the value, the statistical results may be inaccurate, then this button is needed. The histogram can be saved in *.pdf format. Click the button "Save Histogram" to pop up the following interface. Set the width, height, resolution, output path of the histogram and click "OK" button to save the result to local disk.



- **Zoom to Layer**: Calculate the bounding box of the current raster data. All the windows, in which the data object is loaded, will show full extent of the bounding box.
- **Zoom to Native Resolution (100%)**: Display the raster data in 1:1 ratio according to the resolution of the raster data.
- **Remove**: Remove the selected raster data from the current project. This function is the same as the tool Remove.

Settings

- **Histogram**:
  - **Stretch**: The stretch methods of the histogram.
    - **Minimum and Maximum (Default)**: Apply a linear stretch based on the minimum and maximum pixel values, with the minimum and maximum pixel values as the endpoints for the histogram. For example, the minimum and maximum pixel values of the image could be 2488 and 2656 respectively. The values can be stretched linearly between 0 and 255. Distributing pixel values over the entire histogram range, the brightness and contrast of the image are increased and features in the image are easier to distinguish.
    - **Percent Clip**: Apply a linear stretch between the pixel values defined by percent clip minimum and percent clip maximum. For example, the minimum and maximum pixel values of the image could be 2488 and 2656 respectively. Percent clip minimum and percent clip maximum values are 0.02 and 0.98, values less than 0.02 mean the values between 2488 and 2492, values more than 0.98 mean the values between 2652 and 2656, values between 2488 and 2492 become 0, values between 2652 and 2656 become 255, the remaining values are between 0 and 255.
    - **Std deviation**: Apply a linear stretch between the pixel values defined by the std deviation (n) value. For example, the minimum and maximum pixel values of the image could be 2488 and 2656 respectively. If the value of standard deviation (n) is defined as 2, then the values beyond 2 standard deviation become 0 or 255, the remaining values stretch between 0 and 255.
    - **Histogram Equalization**: Apply a non-linear stretch between the pixel values, redistribute the pixel values so that the pixel values in a certain range is approximately equal. This method works well when there are a lot of pixel values that are closely grouped together.

    - **Color Bar**: The colorbar supports several uniformly varying color intervals for color mapping.
    - **BandList**: Select a band from the band list to draw the histogram.
    - **Show all bands (Optional)**: Whether to show all bands.
- **Save Curve**:
    - **Width**: The width of the saved curve.
    - **Height**: The height of the saved curve.
    - **Resolution**: The resolution of the saved curve.
    - **Output path**: The output path of the saved curve.

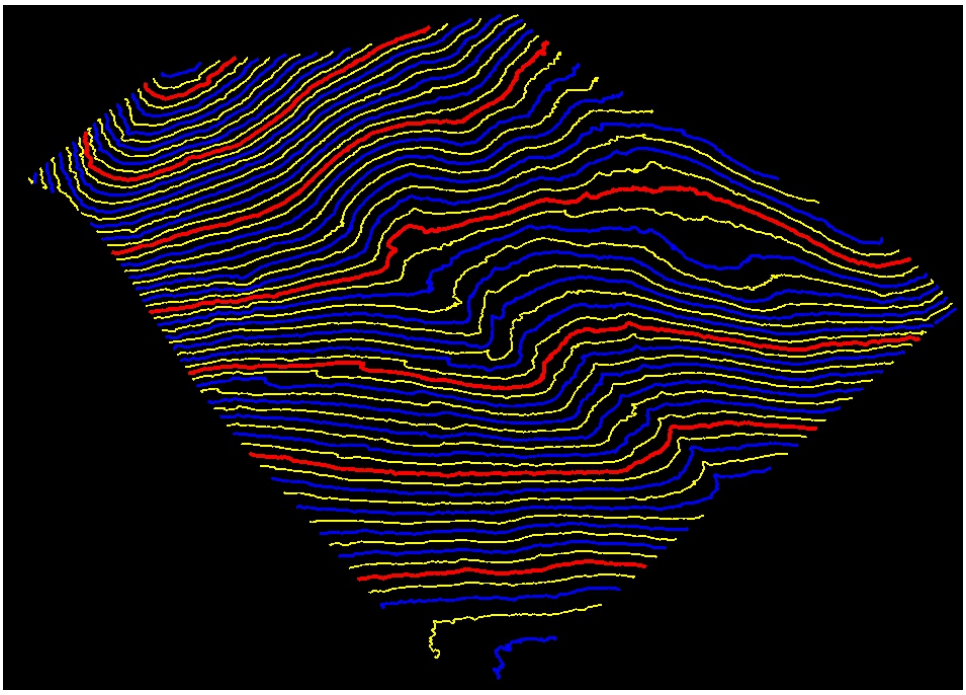
Vector Context Menu

Brief

The right button menu of vector data in the layer management tree mainly includes import and export vector data, it also contains information, show attribute table, zoom to layer, color by elevation, and display by selected for single vector data.

Data Type Context Menu

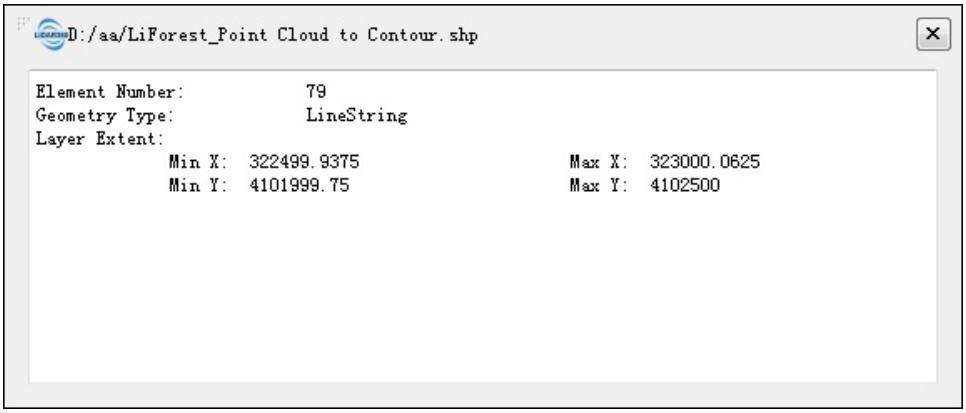
- **Import Data**: The import data format is SHP (*.shp), the same with the function , see Add Data. Import vector data generate by point cloud to contour, as shown below:



- **Remove All**: Remove all vector data from LiPowerline.

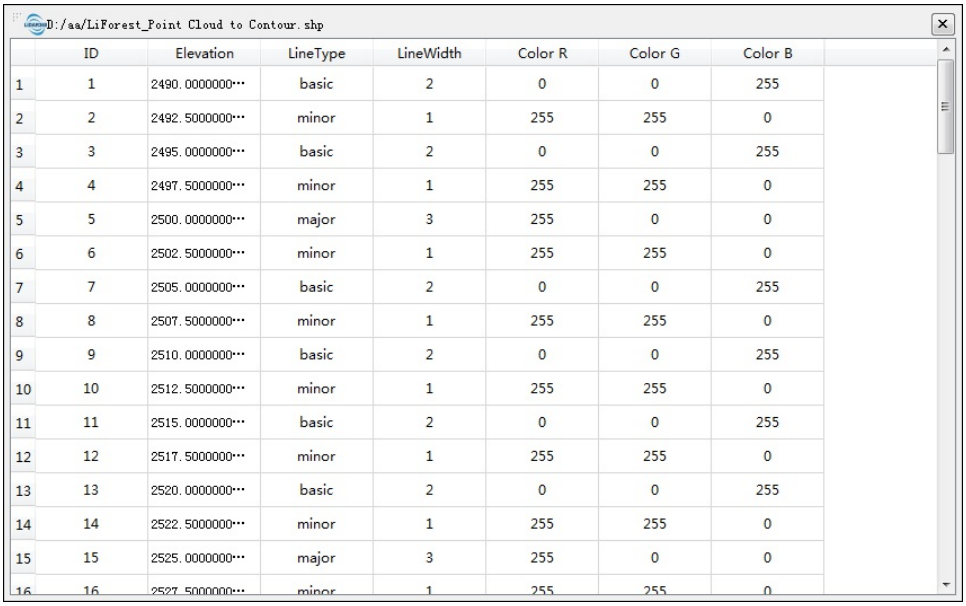
Data Context Menu

- **Info**: View the basic information of vector file, including file path, elements count and bounding box.



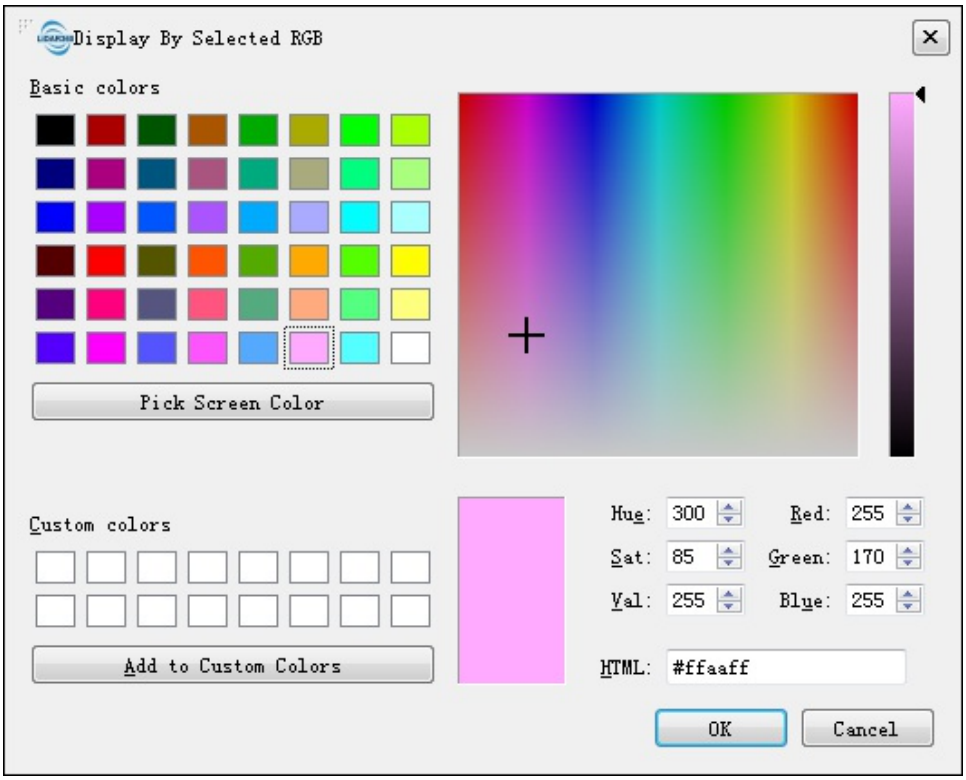
- **Open Attribute Table**:Displays the property sheet information of the vector data. The result is shown in the

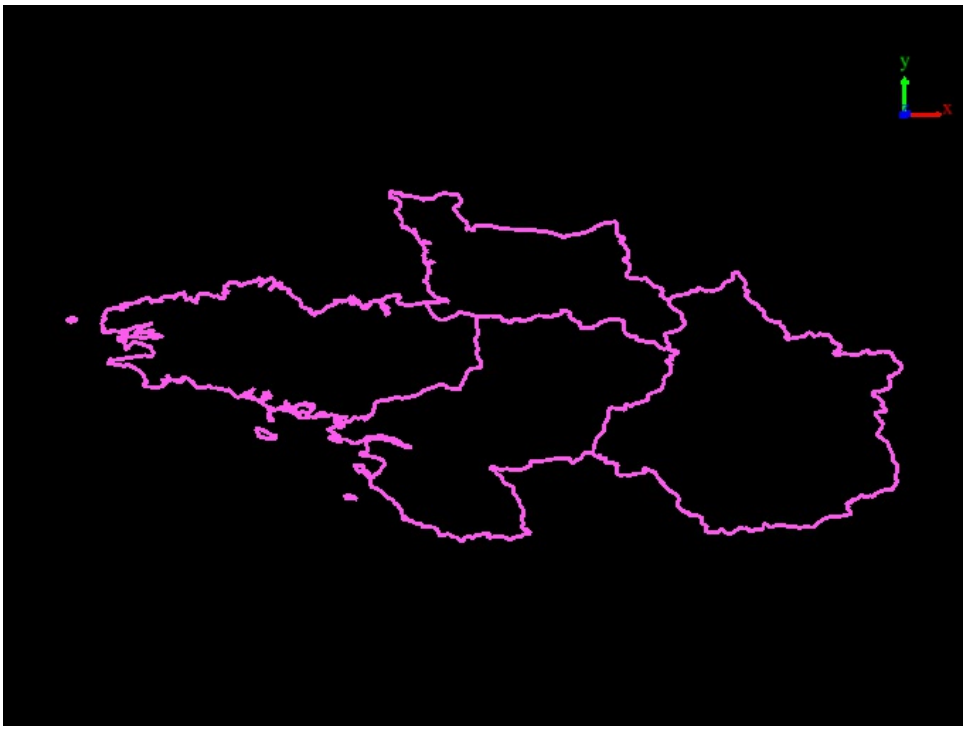
figure:



	ID	Elevation	LineType	LineWidth	Color R	Color G	Color B
1	1	2490.0000000…	basic	2	0	0	255
2	2	2492.5000000…	minor	1	255	255	0
3	3	2495.0000000…	basic	2	0	0	255
4	4	2497.5000000…	minor	1	255	255	0
5	5	2500.0000000…	major	3	255	0	0
6	6	2502.5000000…	minor	1	255	255	0
7	7	2505.0000000…	basic	2	0	0	255
8	8	2507.5000000…	minor	1	255	255	0
9	9	2510.0000000…	basic	2	0	0	255
10	10	2512.5000000…	minor	1	255	255	0
11	11	2515.0000000…	basic	2	0	0	255
12	12	2517.5000000…	minor	1	255	255	0
13	13	2520.0000000…	basic	2	0	0	255
14	14	2522.5000000…	minor	1	255	255	0
15	15	2525.0000000…	major	3	255	0	0
16	16	2527.5000000…	minor	1	255	255	0

- **Zoom to Layer**: Calculates the bounding box of the current vector data, and all windows that contains this file will display globally in this bounding box range.
- **Color by Elevation**: Display the vector data by z value based on selected color bar.
- **Display by Selected**: Display the vector data in fixed color, as shown in the following figure:





- **Remove**: Remove vector file from LiPowerline.

> Note: Except "Import Data", the other function in context menu work on all windows that contains this vector file.

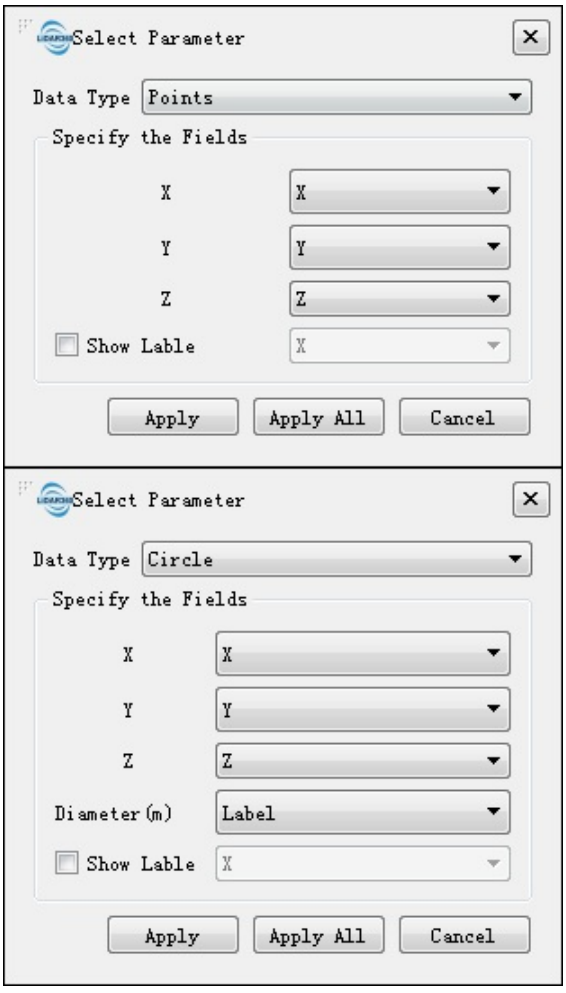
Tables Context Menu

Brief

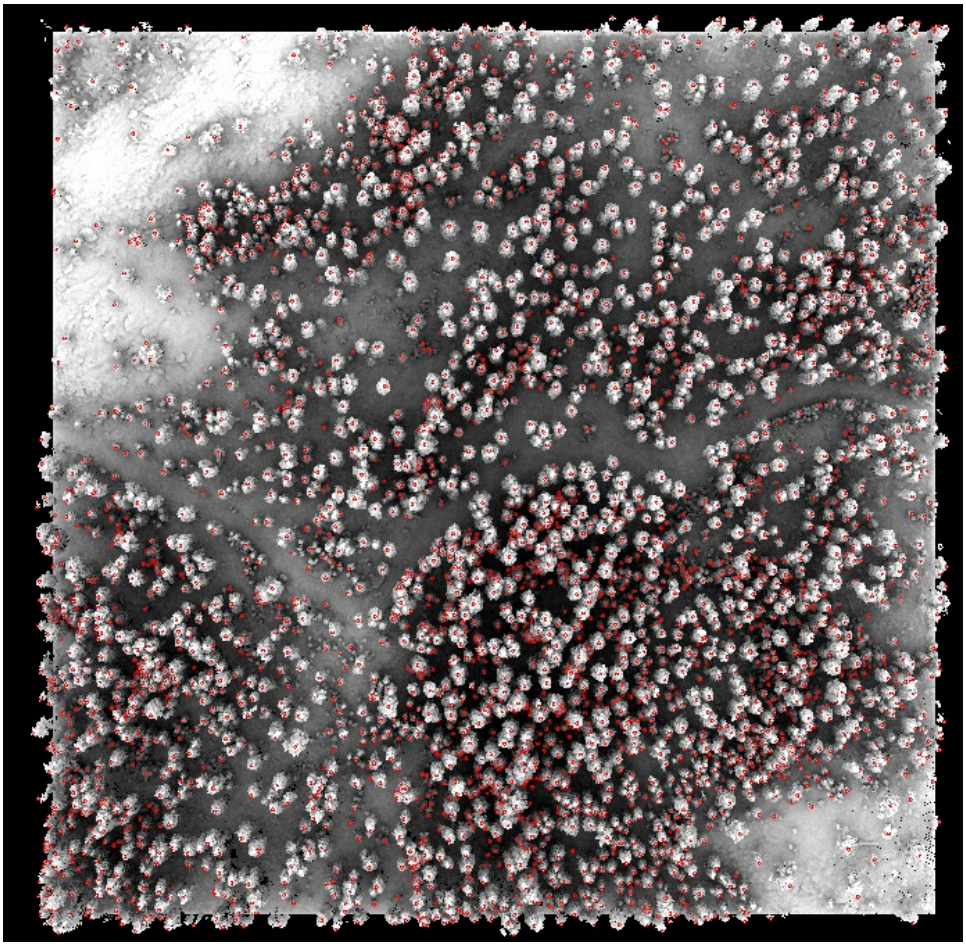
The right button menu of table data in the layer management tree mainly includes import and export table data, it also contains information, attribute, zoom to layer, and removal for single model data.

Data Type Context Menu

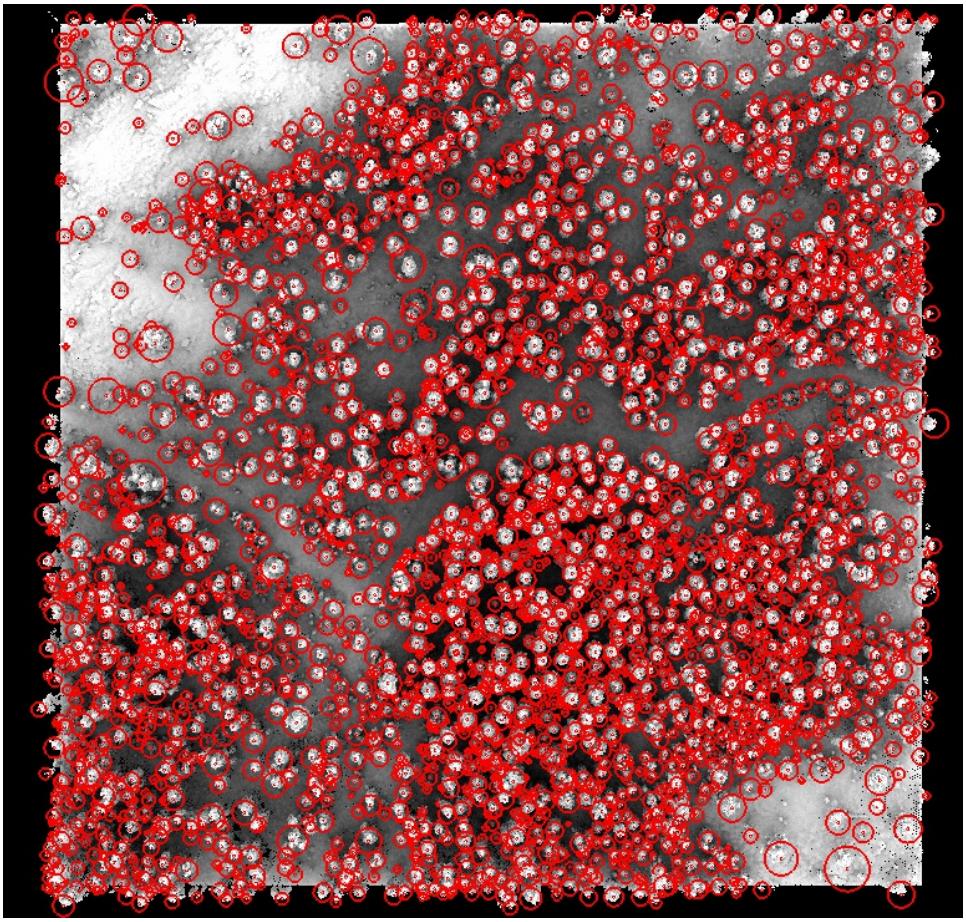
- **Import Data**: The import data format is CSV(*.csv). If click this function, pop-up the dialog, select data type as "Point" or "Circle", and set the specified field X, Y, Z, Diameter (if the data type is circle), and check whether to show labels.



Select data type as "Point", the table file displayed as below:



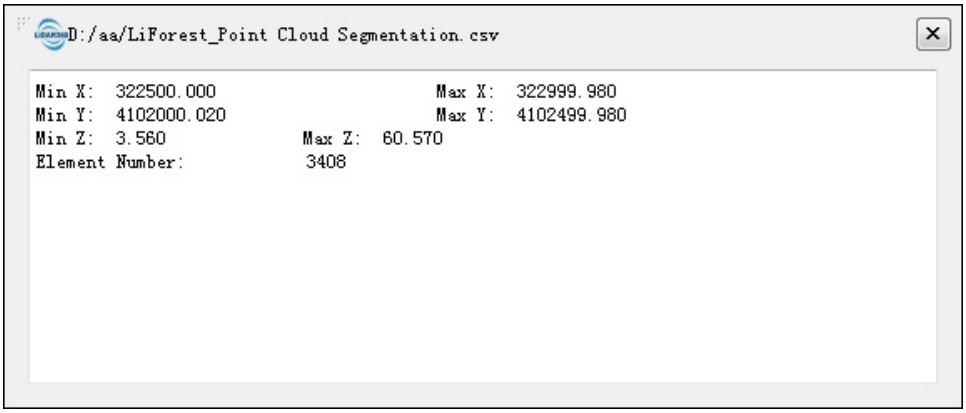
Select data type as "Circle", the table file displayed as below:



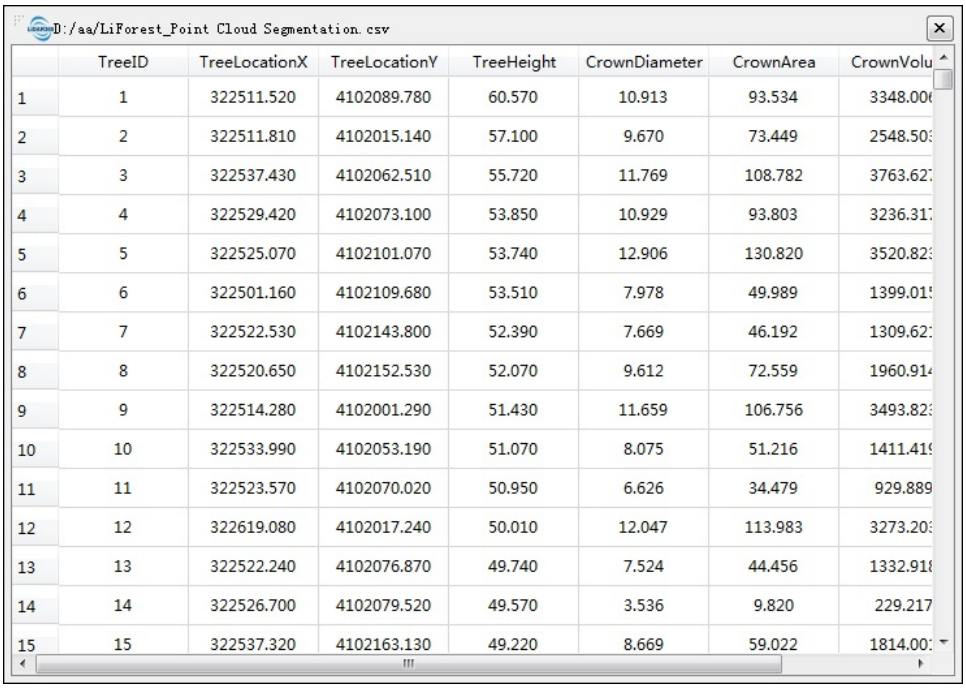
- **Remove All**: Remove all table files from LiPowerline.

Data Context Menu

- **Info**: View the table's basic information, including path, the number of elements, the minimum and the maximum of X, Y, Z values.



- **Attribute**: Display the contents of the table. As shown in the following figure, double click specific row, the window will go to the position.


D:/aa/LiForest_Point Cloud Segmentation.csv

	TreeID	TreeLocationX	TreeLocationY	TreeHeight	CrownDiameter	CrownArea	CrownVolu
1	1	322511.520	4102089.780	60.570	10.913	93.534	3348.00
2	2	322511.810	4102015.140	57.100	9.670	73.449	2548.50
3	3	322537.430	4102062.510	55.720	11.769	108.782	3763.62
4	4	322529.420	4102073.100	53.850	10.929	93.803	3236.31
5	5	322525.070	4102101.070	53.740	12.906	130.820	3520.82
6	6	322501.160	4102109.680	53.510	7.978	49.989	1399.01
7	7	322522.530	4102143.800	52.390	7.669	46.192	1309.62
8	8	322520.650	4102152.530	52.070	9.612	72.559	1960.91
9	9	322514.280	4102001.290	51.430	11.659	106.756	3493.82
10	10	322533.990	4102053.190	51.070	8.075	51.216	1411.41
11	11	322523.570	4102070.020	50.950	6.626	34.479	929.889
12	12	322619.080	4102017.240	50.010	12.047	113.983	3273.20
13	13	322522.240	4102076.870	49.740	7.524	44.456	1332.91
14	14	322526.700	4102079.520	49.570	3.536	9.820	229.217
15	15	322537.320	4102163.130	49.220	8.669	59.022	1814.00

- **Zoom to Layer**: Calculates the bounding box of the current table data, and all windows that contains this file will display globally in this bounding box range.
- **Remove**: Remove the selected file from LiPowerline.

> Note: Except "Import Data", the other function in context menu work on all windows that contains this table file.

Model Context Menu

Brief

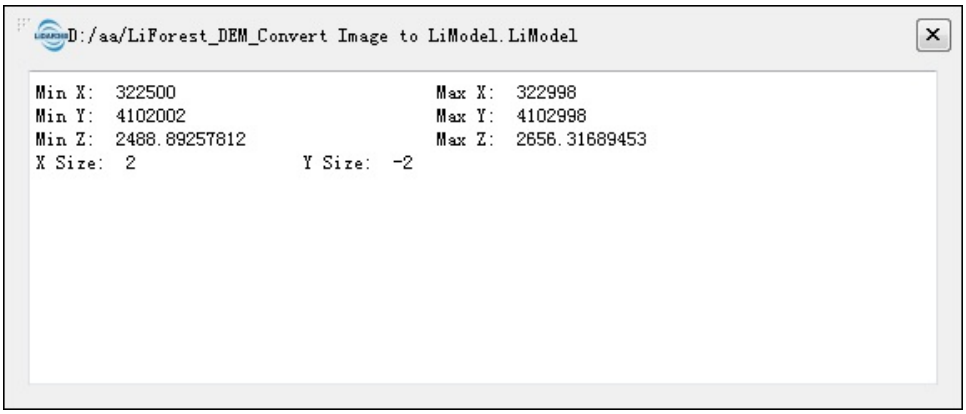
The right button menu of model data in the layer management tree mainly includes import and export table data, it also contains information, display setting, zoom to layer, restatistics, export for single model data.

Data Type Context Menu

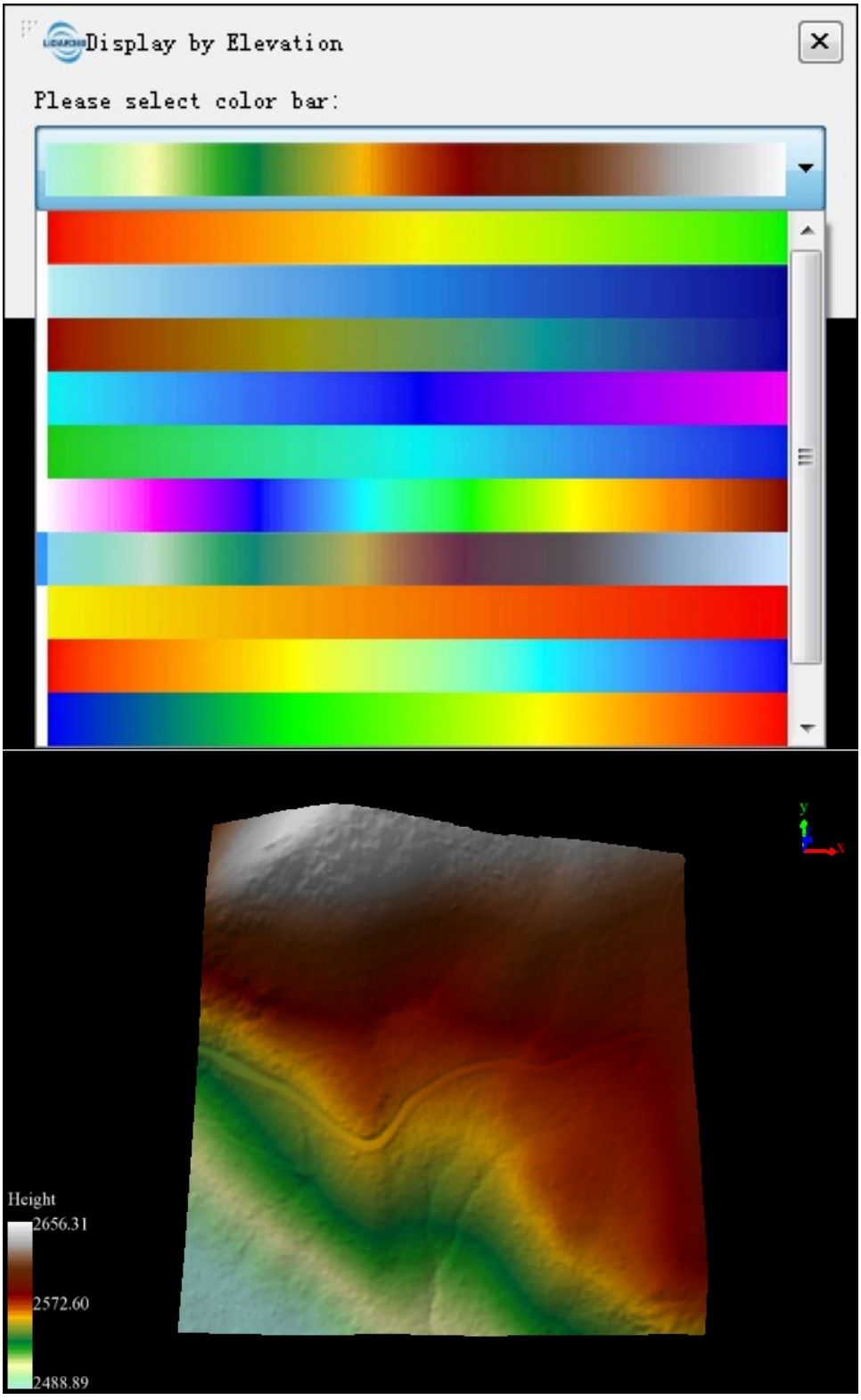
- **Import Data**: The model formats that LiPowerline supported includes: Model (*.LiTin), LiModel (*.LiModel), OSG data (*.osgb,* .ive, *.desc,* .obj). Among them, the LiTIN format and LiModel format are LiPowerline defined model format. This function is the same with the function , see Add Data.
- **Remove All**: Remove all model files from LiPowerline.

Data Context Menu

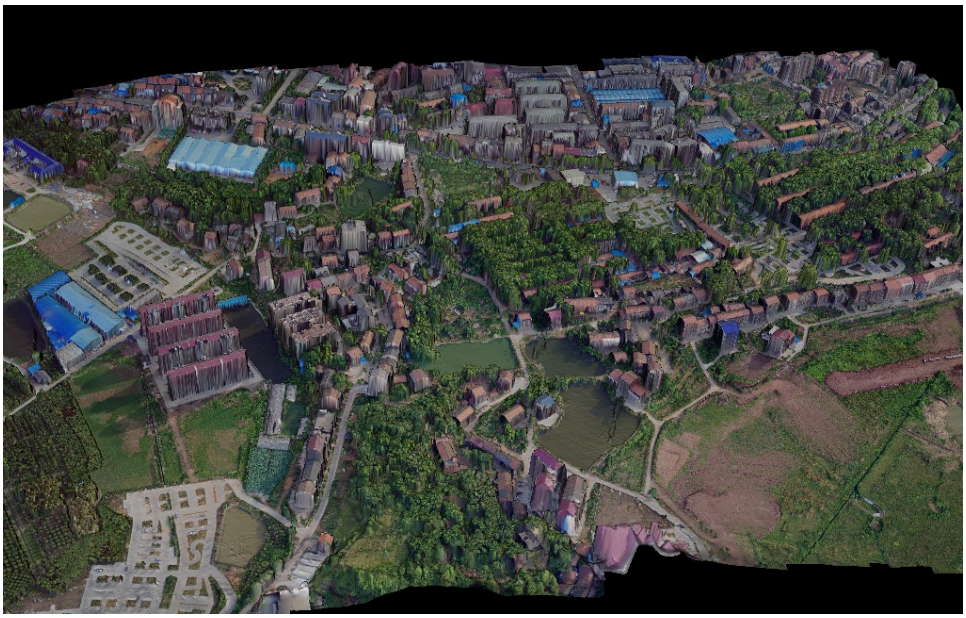
- **Info**: View the basic information of model file, including the path, resolution, the minimum and maximum of X, Y, Z. This function just for LiTin and LiModel file.



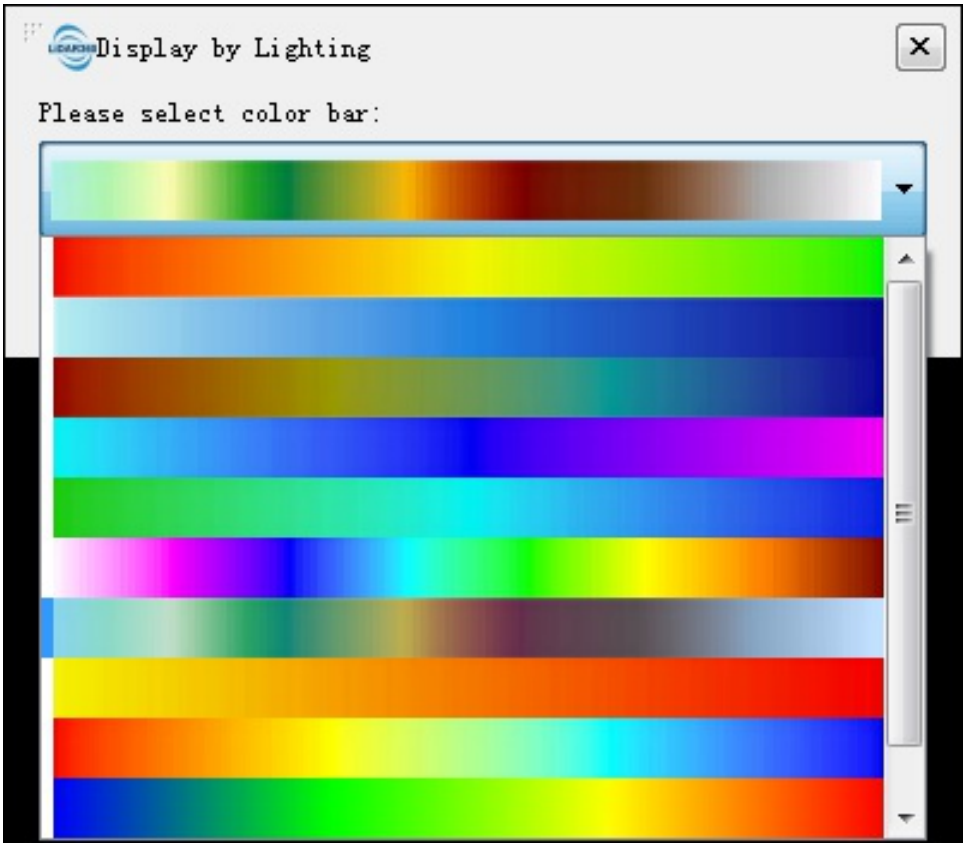
- **View Mode**: Set the model file's display mode, including display by elevation, display by texture, display by light. if select "Display by Elevation", pop-up the selection of color bar dialog, the display effect as below:

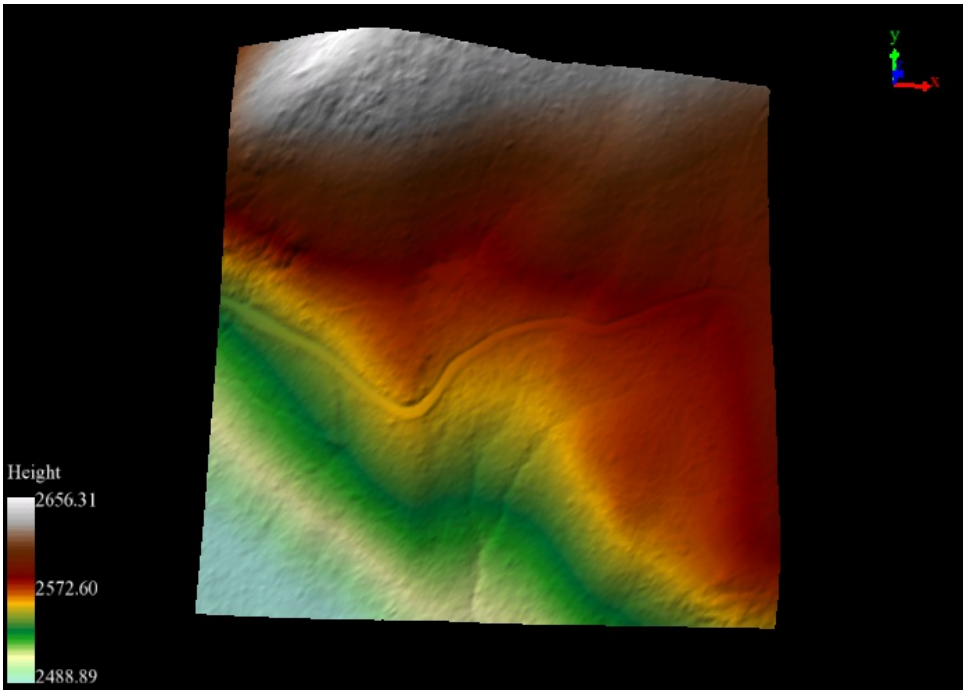


The user can generate models with texture. An example of "Display by Texture" is shown below:



if select "Display by Lighting", pop-up the selection of color bar dialog, the display effect as below:





- **Zoom to Layer**: Calculates the bounding box of the current model data, and all windows that contains this file will display globally in this bounding box range.
- **Restatistics**: Recalculate basic information such as Min X Y Z and Max X Y Z. In general, if you edit the LiModel data, such as smooth height or repair height, you can use the Restatistics function.
- **Export**: This function is only for LiTin and LiModel file, and the export format is TIF. In General, after 3D visualization editing of LiModel and LiTIN which generated by DEM, it is necessary to convert the editing files to TIF format file.
- **Remove**: Remove the selected model data from viewer window or project.

> Note: Except "Import Data", the other function in context menu work on all windows that contains this model file.

Gaussian Splats Context Menu

Summary

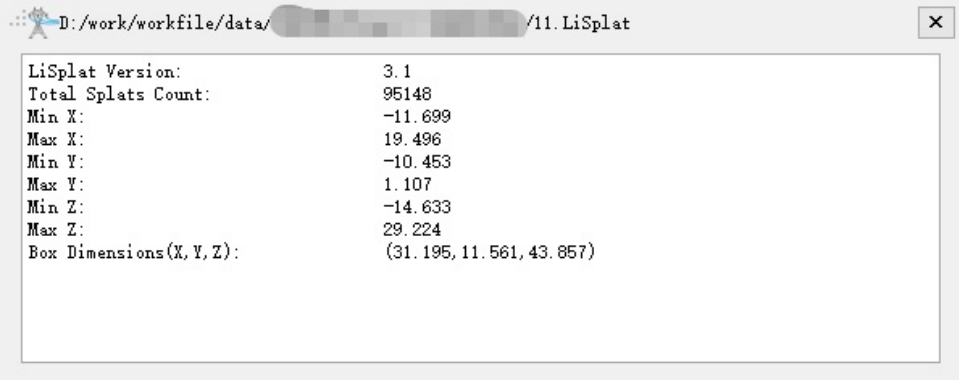
The context menu of gaussian splats in the layer management tree mainly includes Import Data and Remove All for table data, as well as Information, Open File Location, Return, Settings, and Remove operations for a single model data.

Context Menu of Data Type

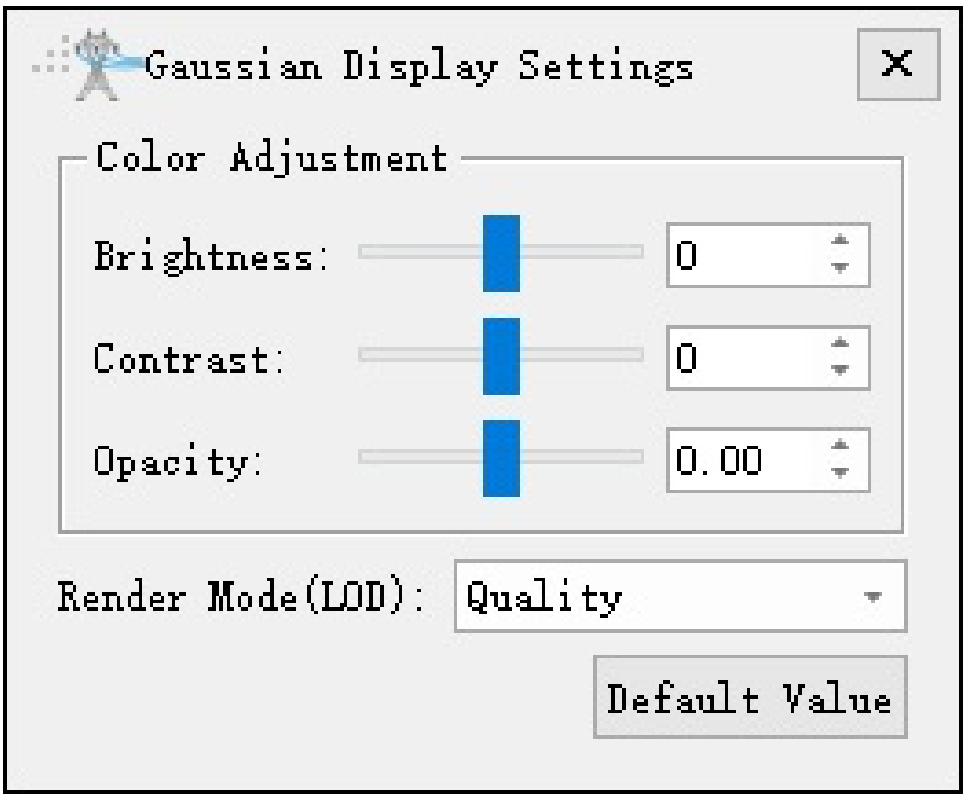
- **Import Data**: The import data format is Gaussian Model(*.LiSplat,*.ply,*.xml). A dialog box pops up; select the gaussian model data to open.
- **Remove All**: Remove all model data in the system from the software.

Context Menu of Data

- **Information**: View the basic information of the gaussian model, including the data path, LiSplat Version, Total Splats Count, maximum/minimum X, Y, Z values, and Box Deimensions.



- **Open File Location**: Open the file location of the gaussian model data.
- **Return**: Return to the initial position of the gaussian model data.
- **Settings**: Gaussian display settings.



- **Remove**: Remove the selected gaussian model data from the software.

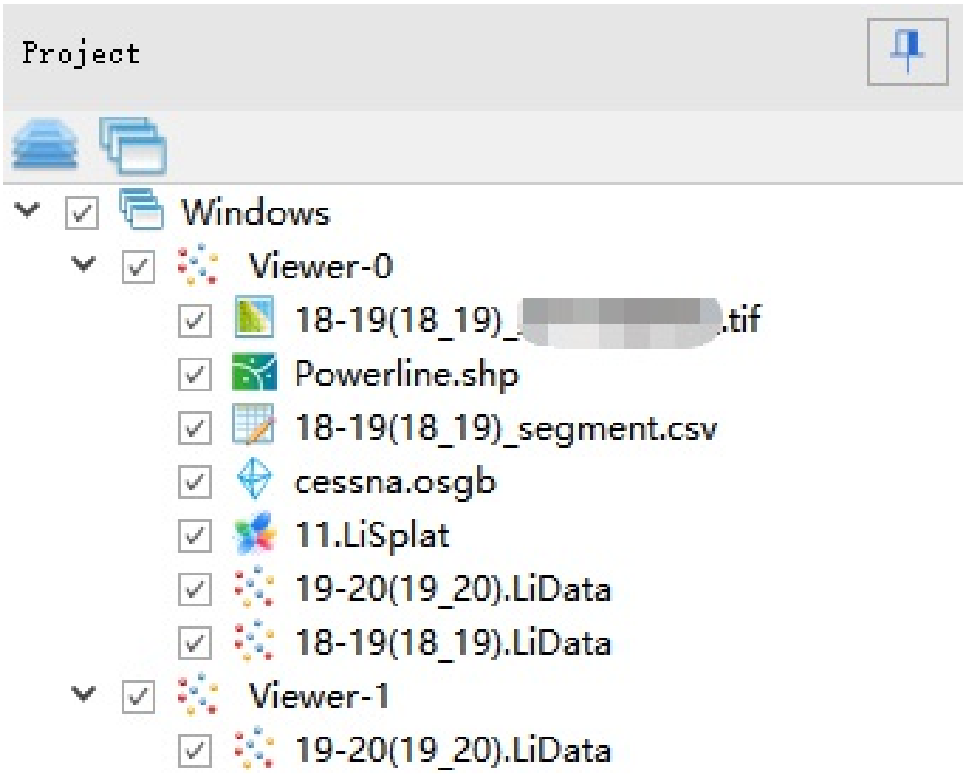
> Note: Except for Import Data and Remove All, the other context menu functions are effective on all windows where this model is loaded.

Window Management

Brief

The **project windows** manage all windows(i.e. viewers) and data in windows. The user can remove data from window, edit display order by dragging data node, show/hide data in specified window by checking/unchecking the box before window/data node. The context menu(i.e. right-click menu) of data node, which differs depending on data types, is mainly used for data query, display, statistics, export, and removal, etc. These functions are effective on specified window.

Click the button to show the **project windows** as follows:



Context Menu

Open the context menu by right clicking window or data.

Window Context Menu

- **Remove All**: Remove all data from the selected window.

Data Context Menu

- **Point Cloud Data Context Menu**: Same as the context menu of point cloud data in layer tree.
- **Raster Data Context Menu**: Same as the context menu of raster data in layer tree.
- **Vector Data Context Menu**: Same as the context menu of vector data in layer tree.

- **Table Data Context Menu**: Same as the context menu of table data in layer tree.
- **Model Data Context Menu**: Same as the context menu of model data in layer tree.
- **Gaussian Splats Data Context Menu**: Same as the context menu of gaussian splats data in layer tree.

> Note: The context menu of window management is only effective on specified window, while the context menu of layer management is effective on all windows.

Viewers

This menu provides operations to create, close and arrange windows.

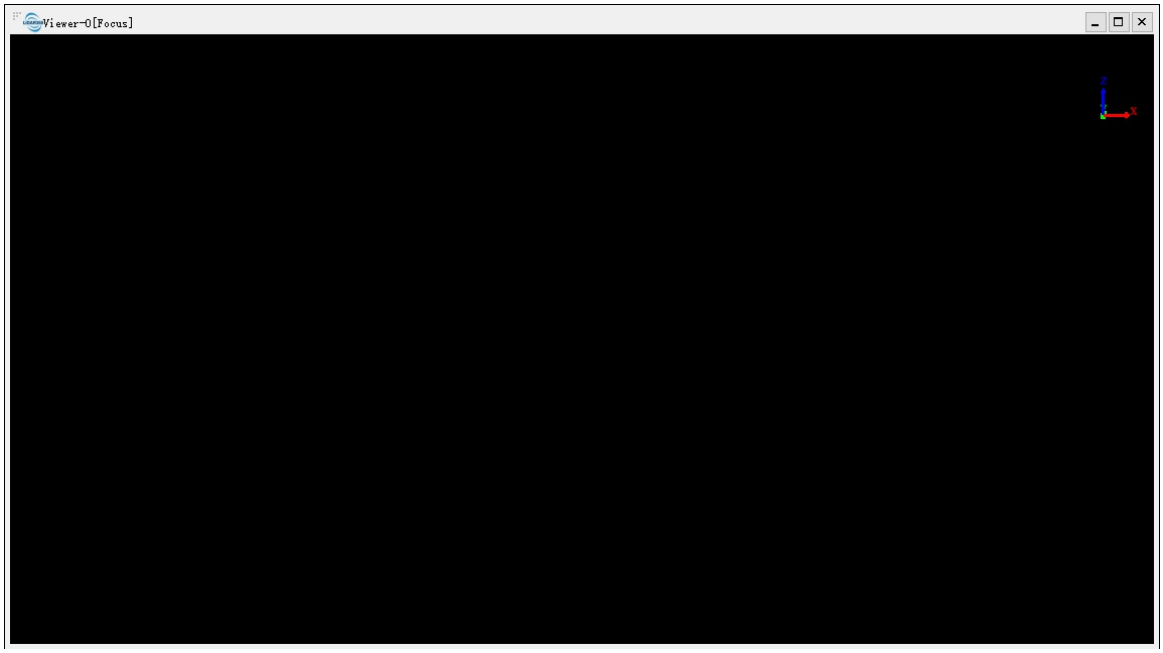
- New Window
- Close
- Close All
- Tile Windows
- Cascade Windows

New Window

Brief: Create new window in the current project.

Steps

1. Click the menu *Viewers* > *Add Window*. The result is as follows.



> **Shortcut Key**: Ctrl+F3

Close

Brief: Close the active window in the current project.

Steps

1. Click the menu *Viewers* > *Close*. The active window will be closed.

> **Shortcut Key**: Ctrl+F4

Close All

Brief: Close all windows except for the power line window in the current project.

Steps

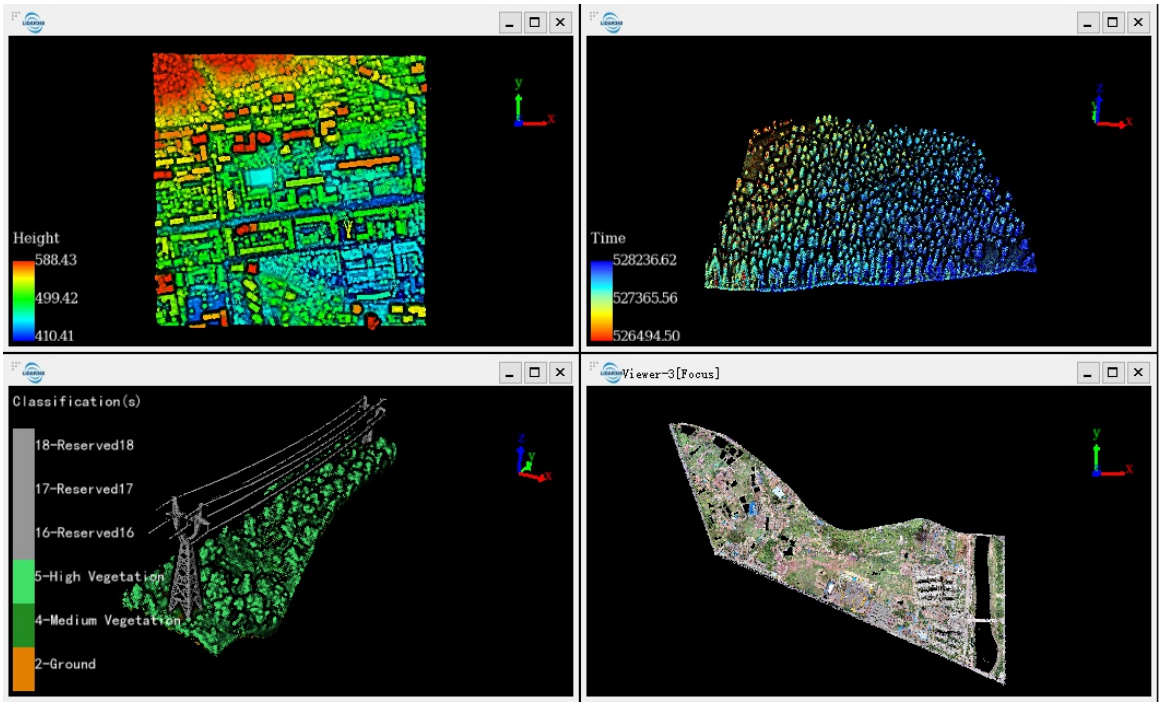
1. Click the menu *Viewers* > *Close All*. All windows are closed except for the power line window.

Tile Windows

Brief: Rearrange all the viewers in tiled fashion.

Steps

1. Click the menu *Viewers* > *Tile Windows*. The result is as follows.



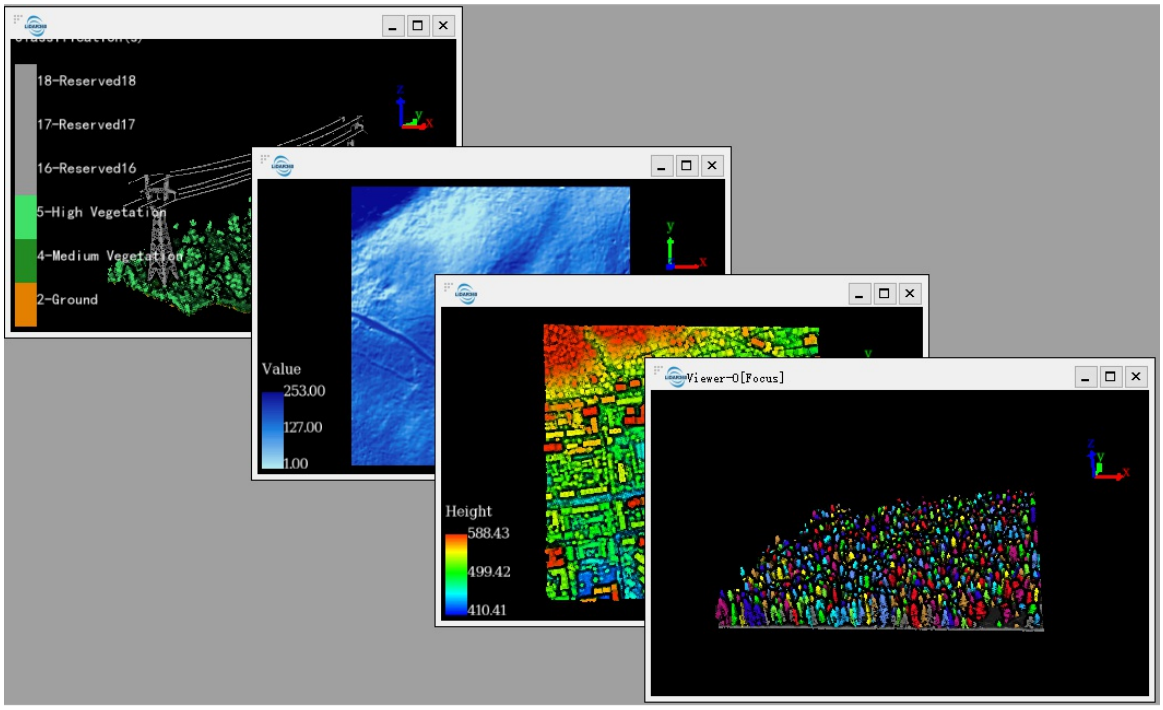
> Note: This function needs at least one window in the current project.

Cascade Windows

Brief: Rearrange all the viewers in cascaded fashion.

Steps

1. Click the menu *Viewers* > *Cascade Windows*. The result is as follows.



> Note: This function needs at least one window in the current project.

Display

Display menu of the software.

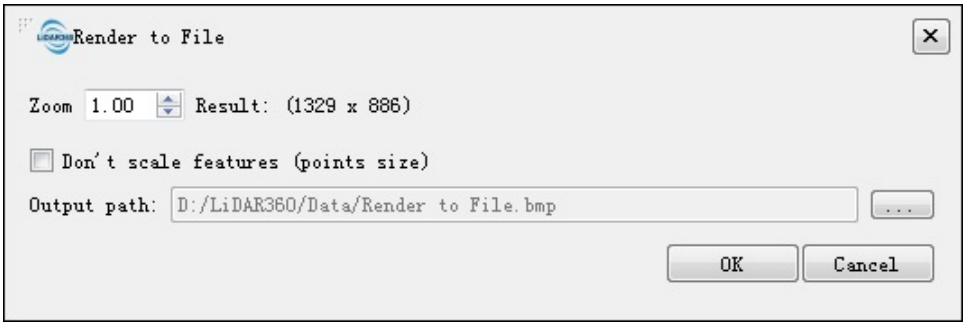
- Render to File
- Save to Video
- Language
- Show Legend
- Show Coordinate Axis
- Toolbar Icon Setting
- Class Setting Options

Render to File

Brief: This tool can render the current 3D view as an image file (*.bmp format is supported). The user can also change the zoom factor, which affects the final image size.

Steps

1. Adjust the 3D view to get the scene you want to render.
2. Click *Display* > *Render to File* and you will get a dialog shown as follows.



3. **(Optional)** Set the zoom factor.
4. **(Optional)** Check or uncheck the "Don't scale features (points size)" according to demand.
5. **(Optional)** Set the Output path.
6. Click "OK" to get the rendered image.

Settings

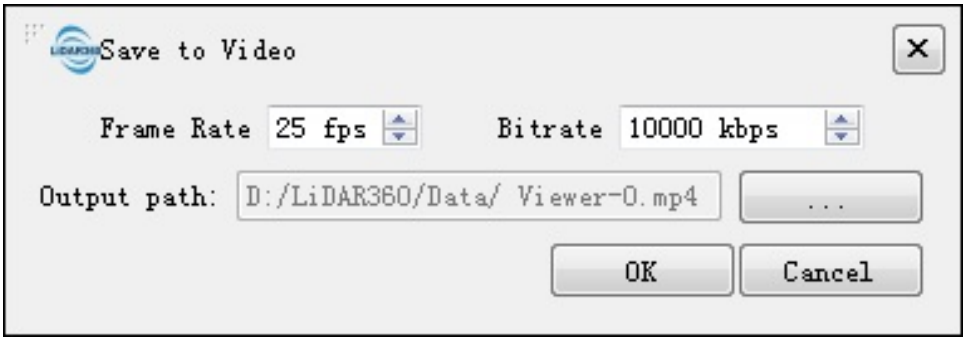
- **Input**: Current active window.
- **Zoom**: Default value is 1 (original image size). You can increase the rendered image size by setting larger zoom factor (the resulting size is displayed on the right).
- **Don't scale features (points size)**: By default unchecked. If it is checked, the rendered point size won't be increased, even if the zoom factor is greater than 1.
- **Output path**: The file path to which the image will be saved.

Save To Video

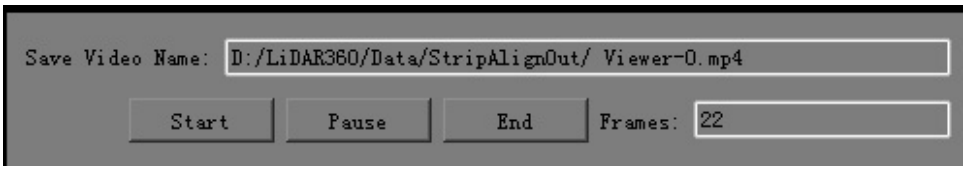
Brief: Record the current window screen and save as video (mp4 and avi formats are supported).

Steps

1. Click *Display* > *Save To Video*, an interface will show as follows.



2. Set the frame rate(default is 25 frame per second).
3. Set the bit rate.
4. Set the output path of video.
5. Click "OK". The following interface is shown on the left-top corner of the current window.



6. Change the camera to get the scene which you want to record.
7. Click "Stop" or "Start"
   - Stop: Pause the current record.
   - Start: Recover the record.
8. Click "End" to finish recording. The video will be saved.

Settings

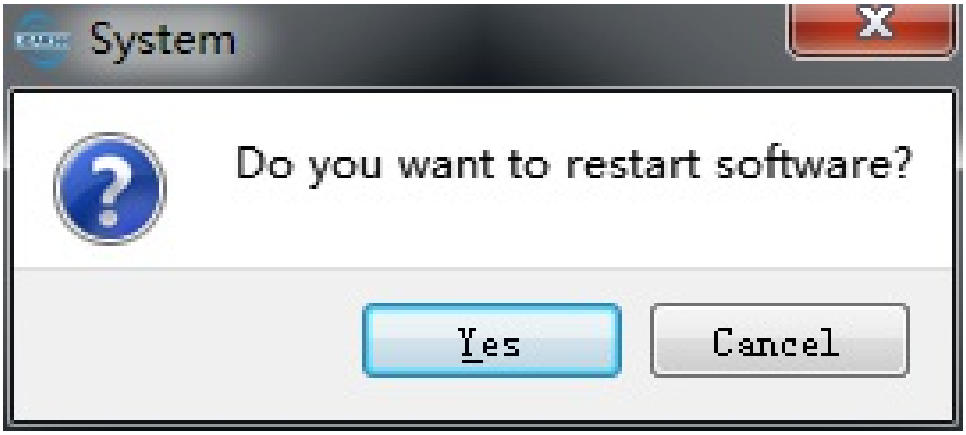
- **Input**: the scene of the window for record.
- **Frame Rate**: The frequency (rate) at which consecutive images called frames appear on a display.
- **Bit Rate**: Refers to the number of bits used per unit of playback time to represent the video. Lower bit rate may result in lower resolution of the picture and has mosaics on the picture, and however the higher bit rate may lead a larger video file.
- **Output path**: The file path to which the video will be saved.

Language

The supported languages in LiPowerline are English and Japanese.

Steps

1. Click *Display* > *Language* > *English* to switch menu language. It will be effective after software restart.



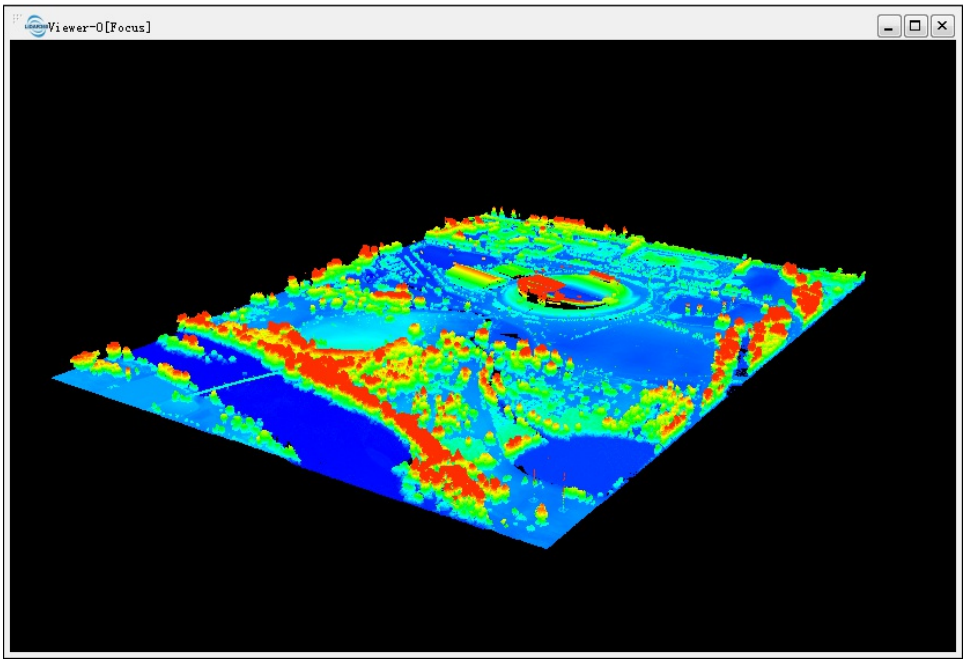
2. Click *Yes* to restart the software immediately; Or click *Cancel* to restart later.

Show Legend

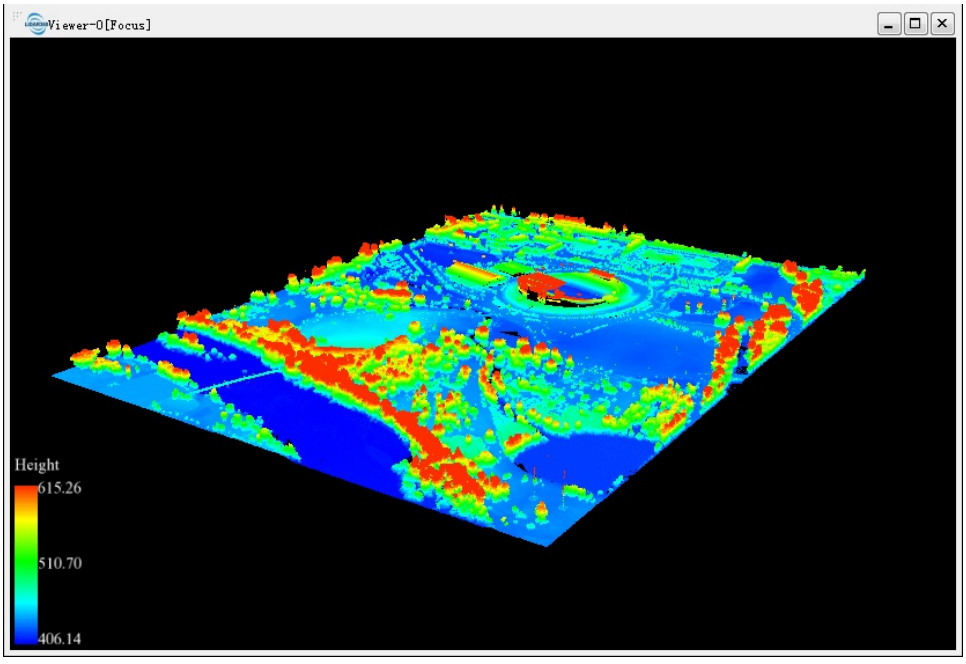
Brief: Show/hide the legend in display windows.

Steps

1. Click *Display* > *Show Legend* to check/uncheck this option.
   Display window without legend:



   Display window with legend:

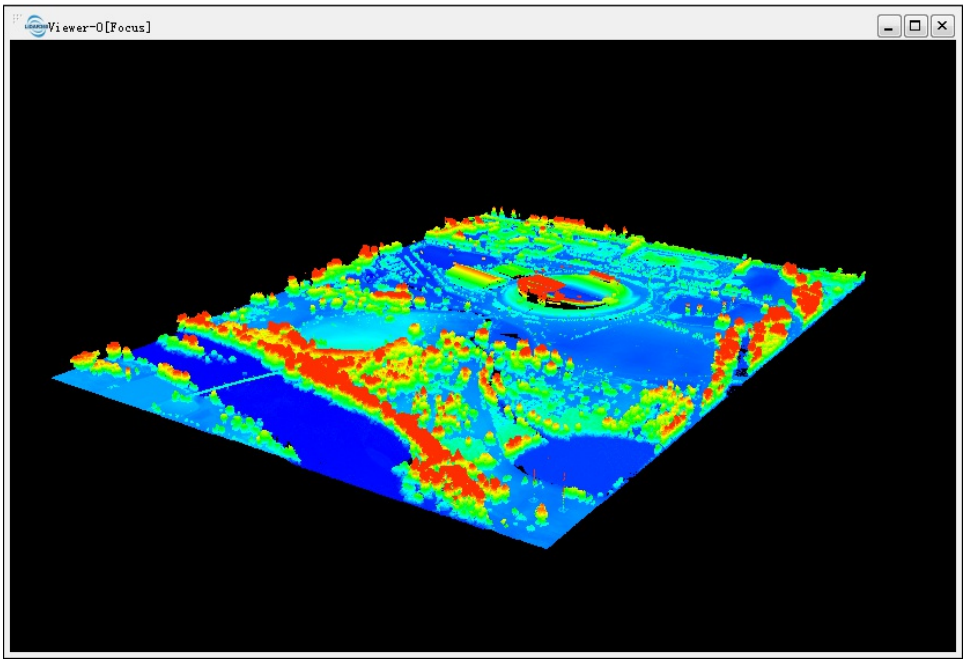


Show Coordinate Axis

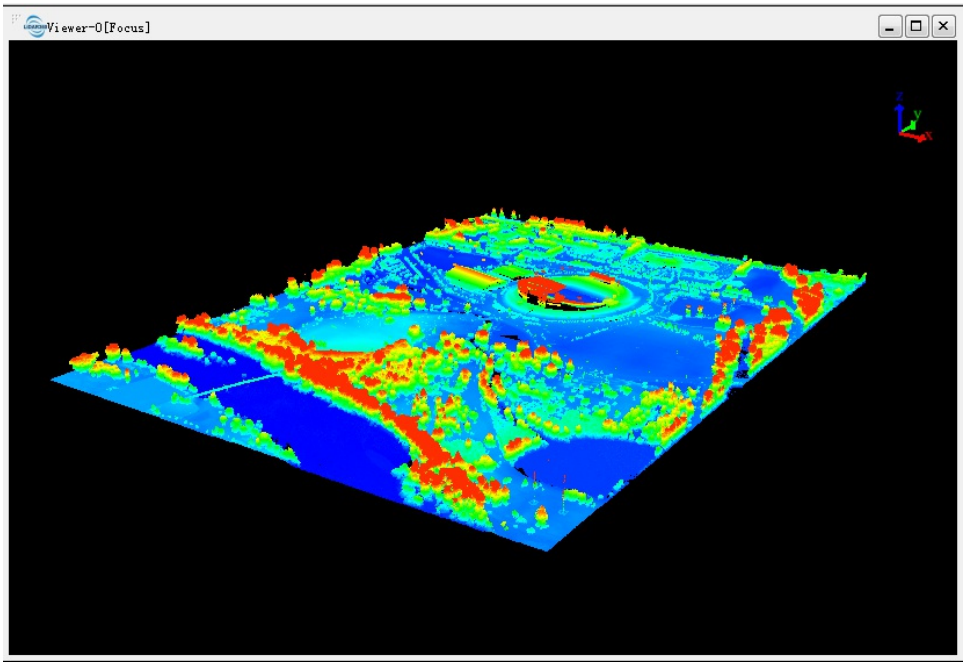
Brief: Show/hide the coordinate axis in display windows.

Steps

1. Click *Display* > *Show Coordinate Axis* to check/uncheck this option.
   Display window without axis:



   Display window with axis:

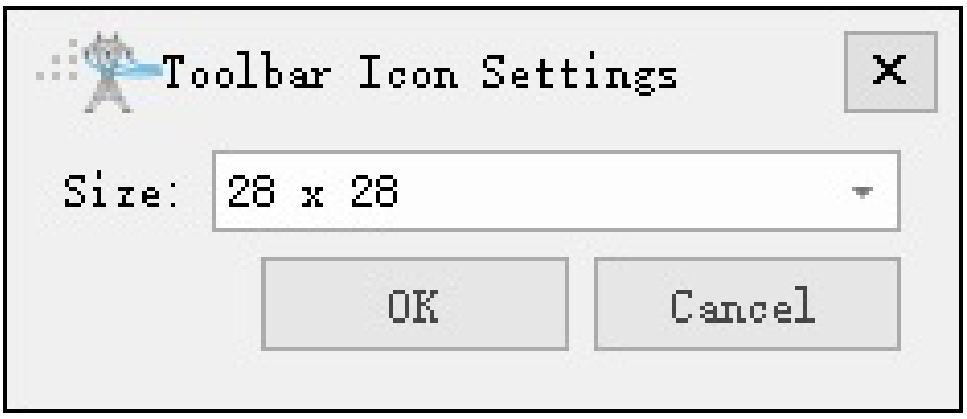


Toolbar Icon Setting

Brief: Set the size of the toolbar icons.

Steps

1. Click *Display* > *Toolbar Icon Setting* to set the size of the toolbar icons, as shown below.



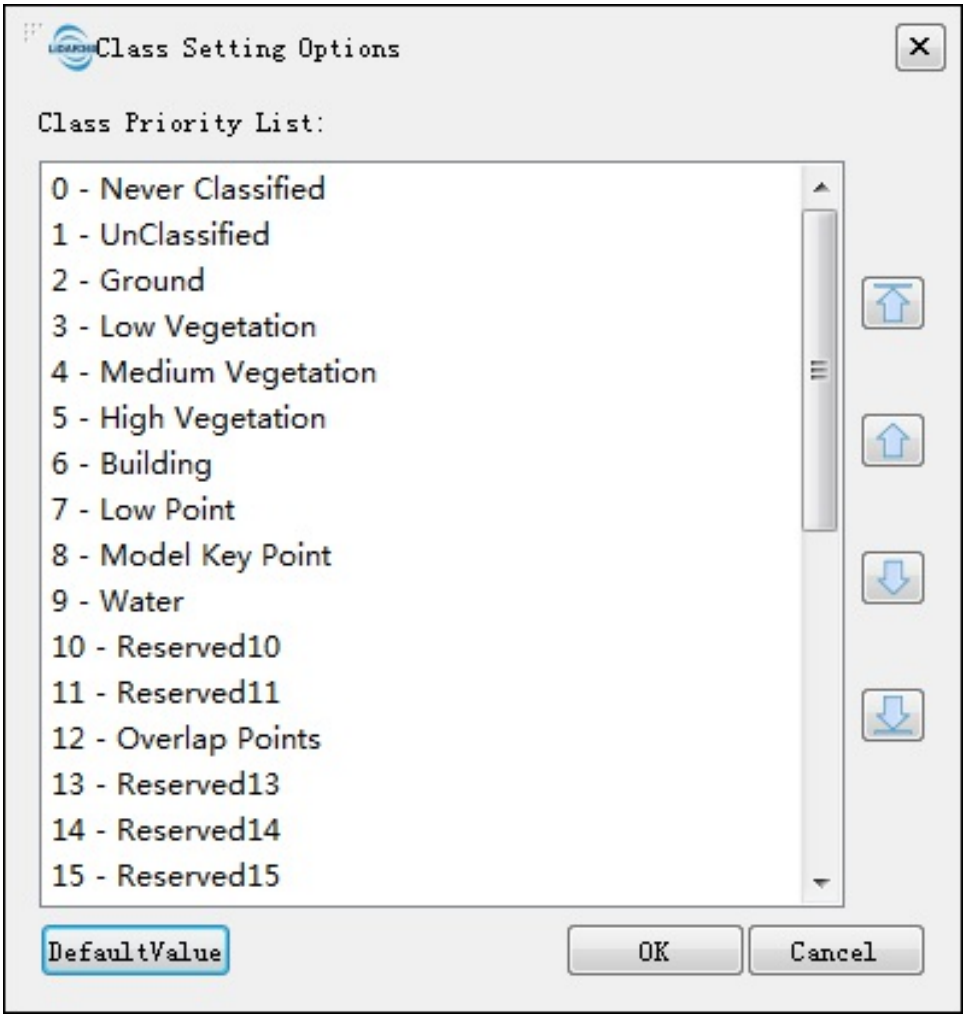
Class Setting Option

Brief: The class setting of LiPowerline complies with the ASPRS standard. As shown in the figure below, the class 0-9 and 12 are fixed class type, the 10th, 11th, and 13th-31st class are reserved class. The fixed class can't be modified, and the reserved classes are customizable. This function set the order of classes according to the requirements and it will be displayed in order on the dialog and profile function.

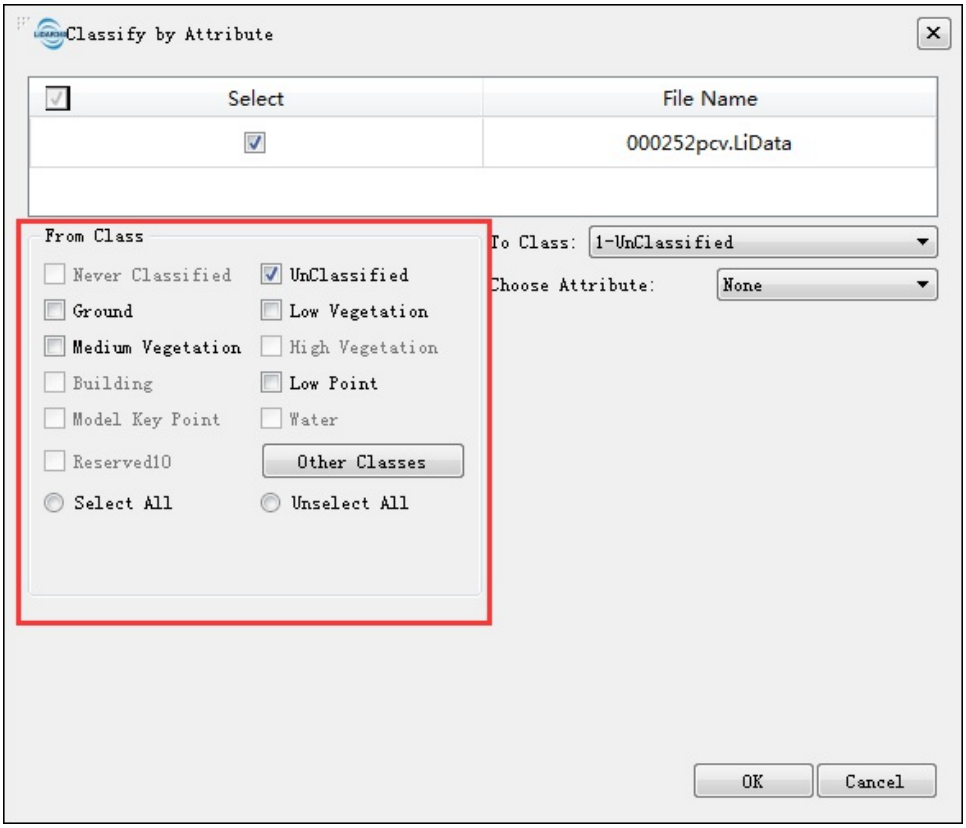
Classification Value (bits 0:4)	***Meaning***
0	Created, never classified
1	Unclassified[1]
2	Ground
3	Low Vegetation
4	Medium Vegetation
5	High Vegetation
6	Building
7	Low Point (noise)
8	Model Key-point (mass point)
9	Water
10	*Reserved for ASPRS Definition*
11	*Reserved for ASPRS Definition*
12	Overlap Points[2]
13-31	*Reserved for ASPRS Definition*

Steps

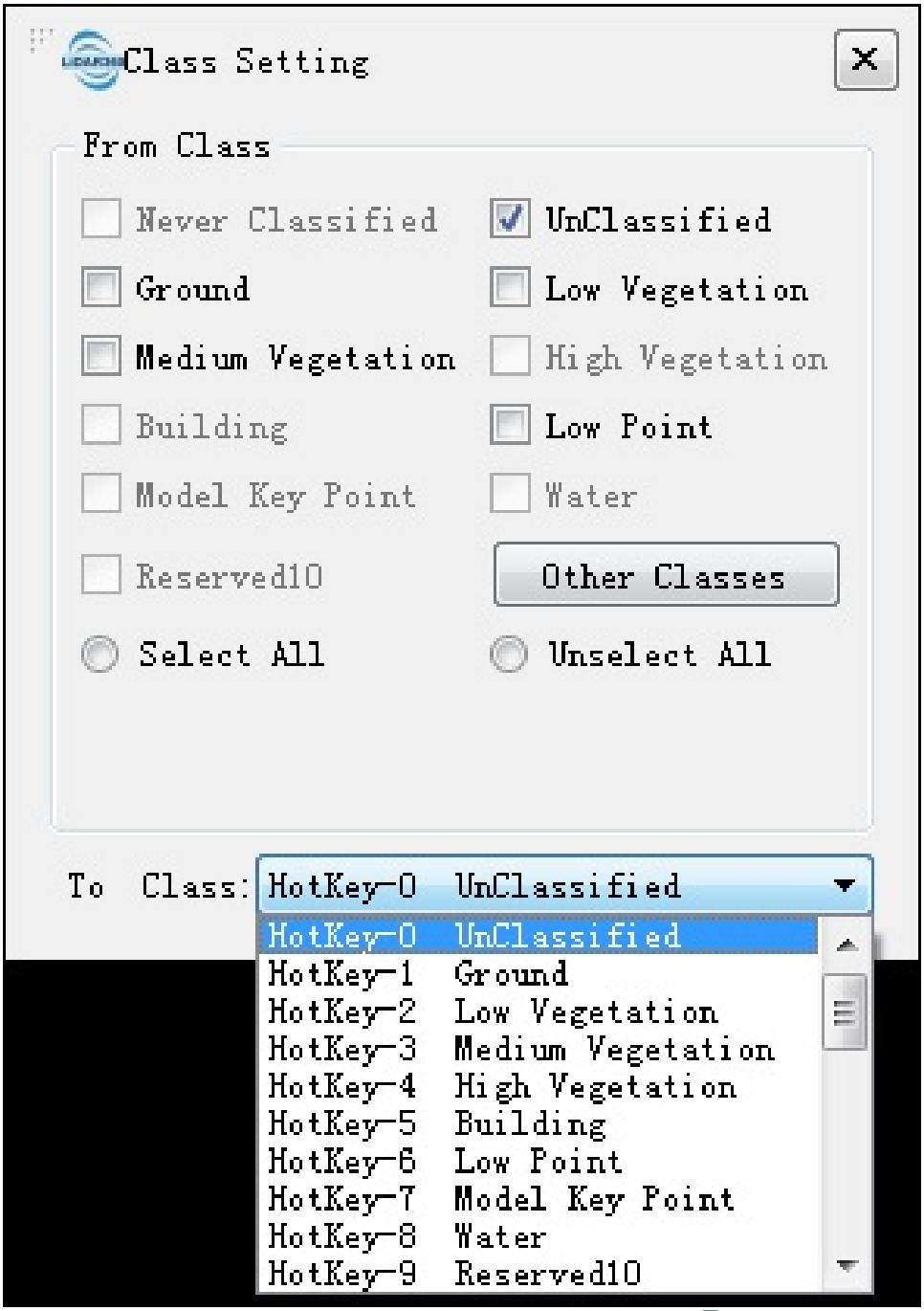
1. Click *Profile Classification* > *Class Order*, open the dialog (default list of classes):



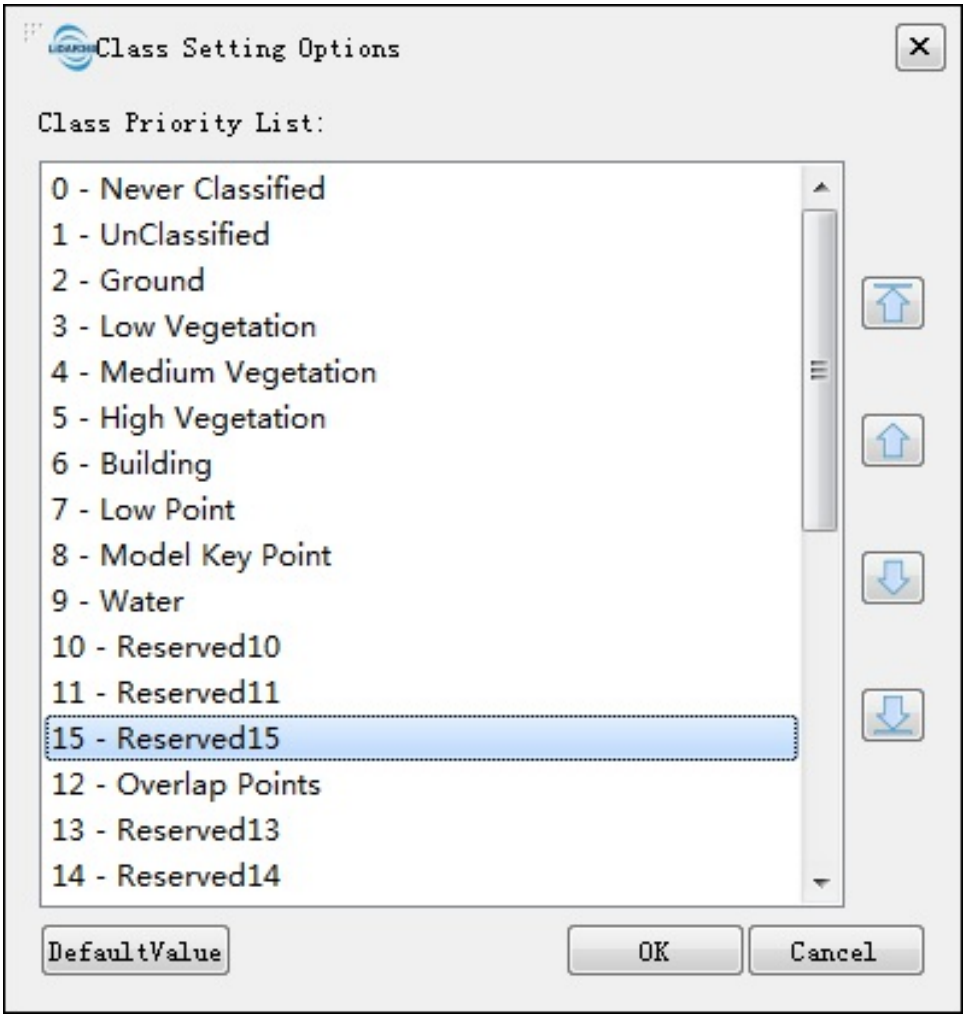
class settings in the classification function interface are as shown in the following figure:



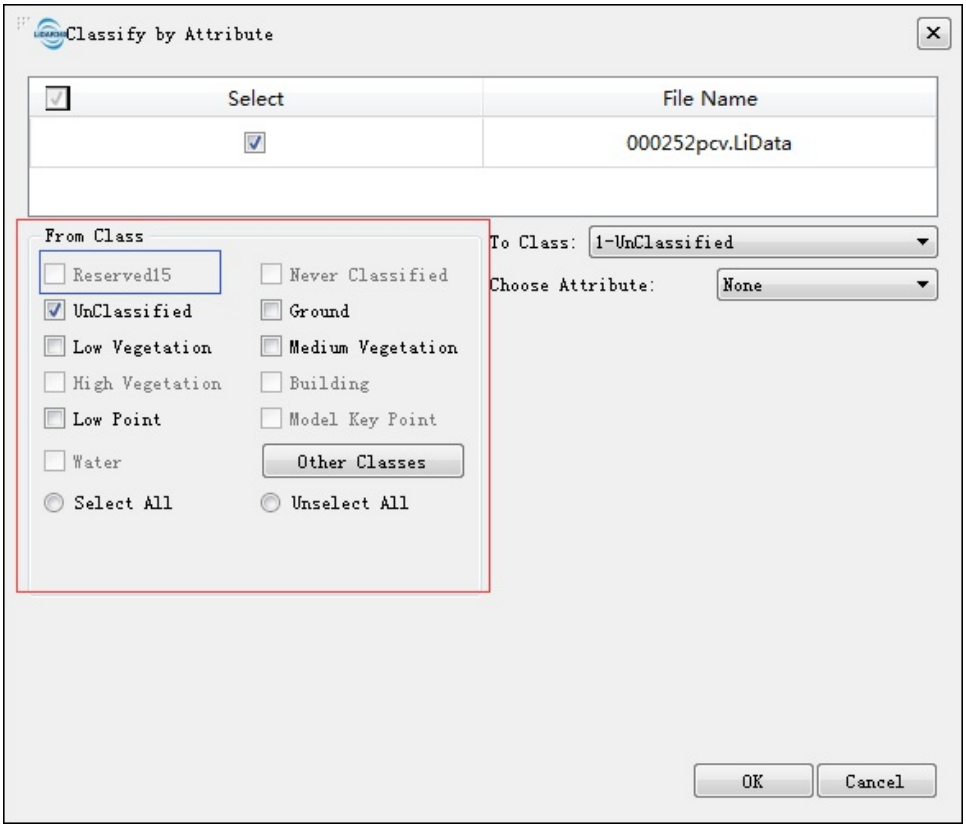
The class setting interface in the profile is shown in the following figure:

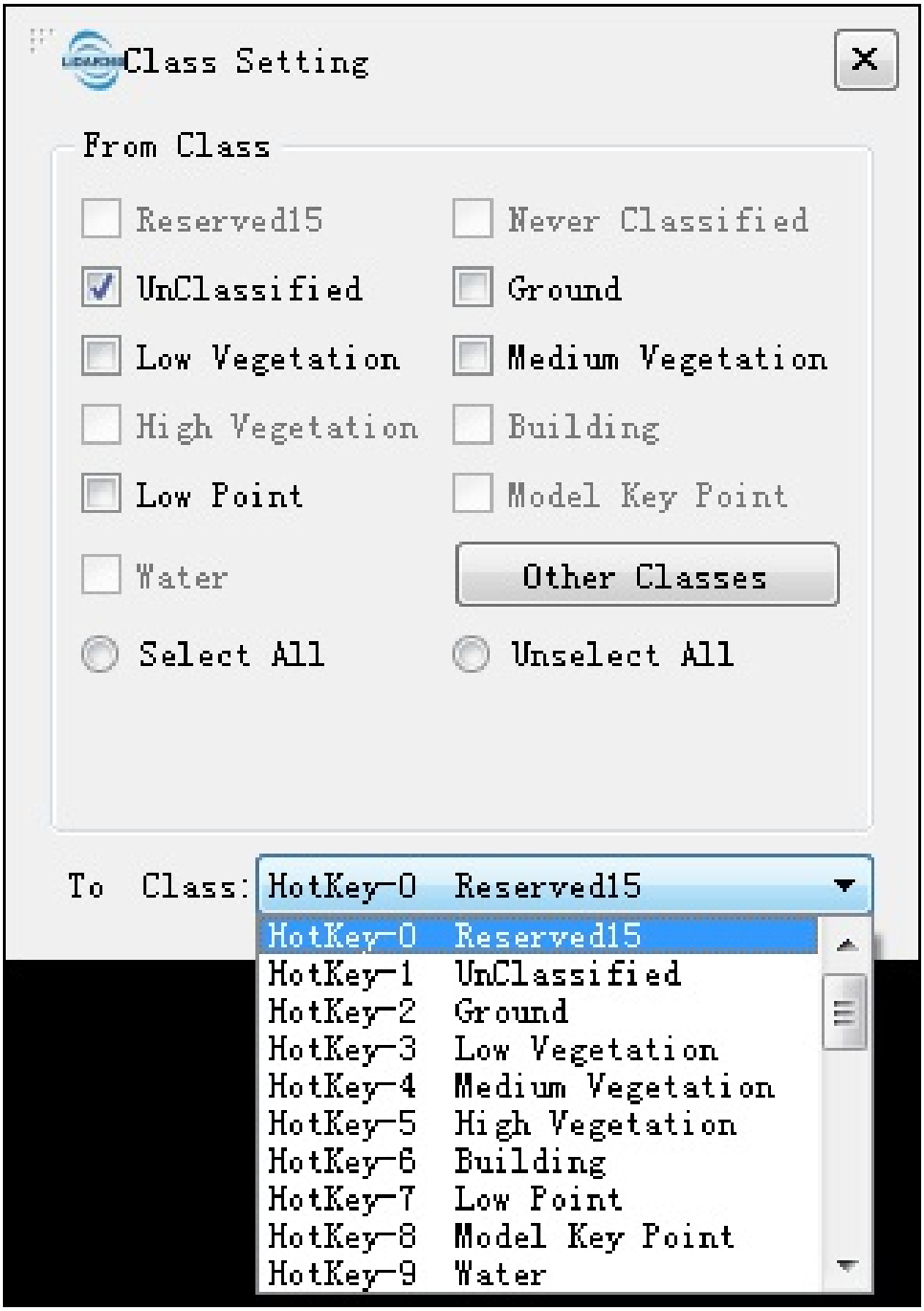


2. Select one class, click the button ⇩ to move down one step, click the button ⤓ to move to the bottom, click the button ⇧ to up one step, click button ⤒ to move to the top; or mouse drag the class to a fixed position.

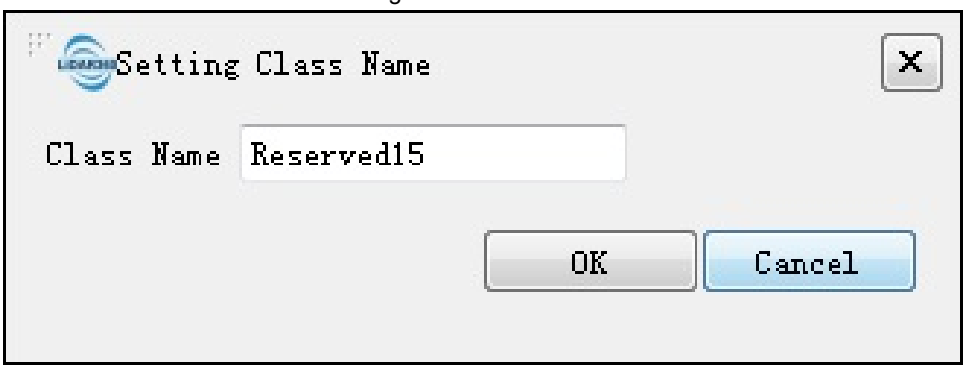


Taking Reserved15 class as an example, set the reserved15 as the highest priority, the class settings in the classification function interface and the class setting interface in the profile are shown in the following figure:


Classify by Attribute
Select
File Name
000252pcv.LiData
From Class
Reserved15
Never Classified
UnClassified
Ground
Low Vegetation
Medium Vegetation
High Vegetation
Building
Low Point
Model Key Point
Water
Other Classes
Select All
Unselect All
To Class:
1-UnClassified
Choose Attribute:
None
OK
Cancel



3. Double click the class in the class list to setting the class's name. As shown below:



4. Click "Default" to restore the class setting option to default.
5. Click "OK" to save the current class setting list.

6. Click "Cancel" to cancel the current class priority setting and restore to the previous setting.