

Product Version	XYZ Mesh
	Version 3
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MANUAL

Intro

XYZ Mesh is used to convert X Y Z data points into a MESH configuration for the use of 3-D Surface Plots, Wireframe 3-D Surface Charts, Contour Graphs Wireframe Contours, 3D Columns and 3D Bars. XYZ Mesh is also used for converting MESH back into X Y Z data. XYZ Mesh will allow the user to select between exporting the data into a CSV or copy it to the clipboard. The user can specify whether to have singular points converted into MESH configuration or have the singular points automatically converted into a curved MESH format for a true surface plot.

Converting XYZ to MESH

Paste

Begin by selecting the 'XYZ Input' tab. Once selected either 'Right-Click > Paste' or 'Ctrl+V' to paste the XYZ data from your clipboard into XYZ Mesh in the XYZ datatable. When pasting values DO NOT include the header text (X Y Z) as it is already included for you.

Options : Sorting

When converting XYZ to Mesh you have several options. The first is how you would like to sort your data. By default XYZ Mesh will sort your data in both the X and Y axis creating an ideal Mesh curve. If you would like to change this toggle on your preferred setting.

Curve

By default the curve is set to 'Complete' and 'Auto Curve'. 'Complete' will curve your data to the furthest possible point within 3 cycles. This means XYZ Mesh will stop converting when 3 cycles of calculations has passed without a change being made. 'Auto Curve' will automatically generate curving calculations to fill in blank areas with data. If you would like to generate a Mesh with only the data available (without curving) change this setting to 'Single Points'.

Duplicates

By default all duplicate data will be removed during conversions. If you would like to keep the duplicated data then select Keep All Data.

Decimals

The final step is selecting the decimals in which you would like to use. The more decimal points selected the more data that will need to be sorted and converted and the more sporadic the final data is. If you convert your data and find many blank or empty cells lower the decimal points try again.

The screenshot displays the XYZ Mesh v3 application window. On the left, the 'XYZ Input' tab is active, showing a table with columns X, Y, and Z. The 'MESH Input' tab is also visible. Below the input table are options for 'Convert Lat Long to X,Y', 'Export XYZ to CSV', and 'Copy XYZ'. The 'Mesh Conversions' section includes '3D Line Graph', 'Convert to MESH', and 'Convert and Export to CSV'. The 'Auto Sort' options are set to 'Complete', 'Auto Curve', and 'Remove Duplicates'. The 'Decimals' field is set to 5. The 'Converted Data' table on the right shows the resulting data points. On the right side, the 'Graphing from Converted MESH Data' window is open, showing a 3D surface plot with X, Y, and Z axes. The plot is rendered in a dark scheme with a blue gradient. The 'TOP VIEW' is selected, and the 'X Axis' is set to 21 and the 'Y Axis' is set to 328. The 'Color Variant' is set to 'RoyalBlue'.

XYZ to MESH

When all of your options are set click either the 'Convert to MESH' or 'Convert and Export to CSV' buttons. Both will perform the conversion. 'Convert to MESH' will convert your data into MESH, display your data on the right and then graph your data in the right Chart Image. 'Convert and Export to CSV' will convert your data and save it as a CSV data spread sheet.

Convert XYZ to 3D Line Graph

Paste

Begin by selecting the 'XYZ Input' tab. Once selected either 'Right-Click > Paste' or 'Ctrl+V' to paste the XYZ data from your clipboard into XYZ Mesh in the XYZ datatable. When pasting values DO NOT include the header text (X Y Z) as it is already included for you.

3D Line Tab

After pasting your data into XYZ Mesh select the '3D Line Graph' tab located at the bottom. Switching to this tab will allow you to convert your data into a 3D line graph and preview the converted data in the Chart Image located on the right.

Converting Data

When your options are set you can convert your data with either the 'Convert to 3D Line' or 'Export to CSV' button. Both will convert your data into a 3D Line Graph for external graphing. The Convert to 3D Line will convert your data for you and show a preview of the converted data on the right via the graph. The Export to CSV button will convert your data and export the converted data into a CSV data spread sheet.

Convert and Curving MESH

Paste

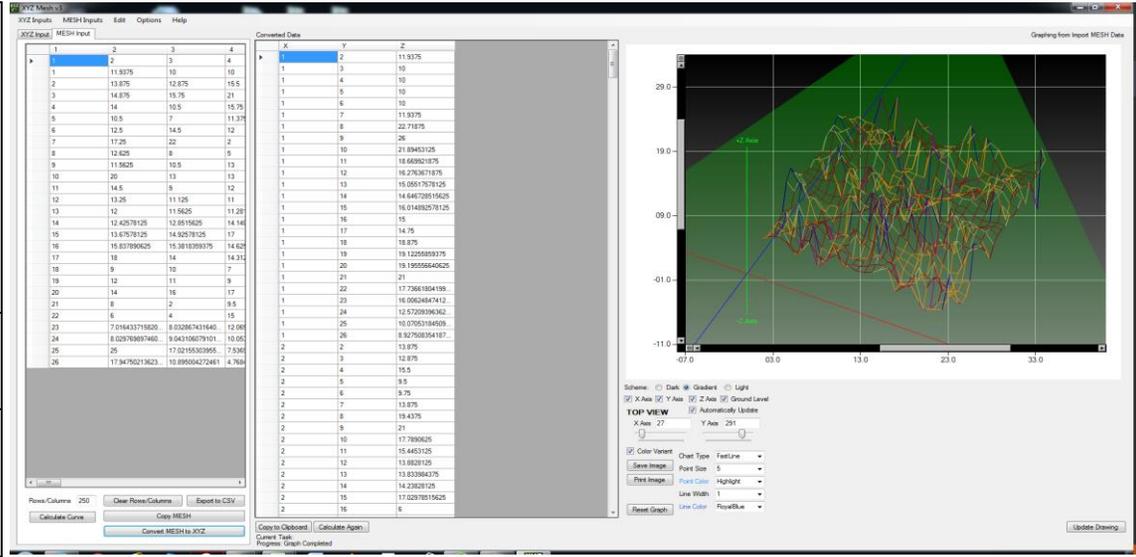
Begin by selecting the 'MESH Input' tab. Once selected either 'Right-Click > Paste' or 'Ctrl+V' to paste the MESH data from your clipboard into XYZ Mesh in the MESH datatable. If your clipboard data is too large for the current Rows/Columns count you will need to first adjust those numbers (located at the bottom) and click 'Clear Rows/Columns' to generate more blank cells. Unused cells will be automatically over written and removed. When pasting values DO NOT include the header.

Converting to XYZ

After pasting your data select the 'Convert MESH to XYZ' button. This button will allow you to convert all of your known data into XYZ data.

Curving MESH

After pasting your data click the 'Calculate Curve' button. This button will automatically curve your data and fill in all blank values with calculated 'filler' data that will turn your mesh drawing into a complete curve.



Graph Options

Color Schemes

There are three Color Schemes. They are located under the graphed image on the right. The default color scheme is 'Gradient'. There is also 'Dark' (black) and 'Light' (off-white).

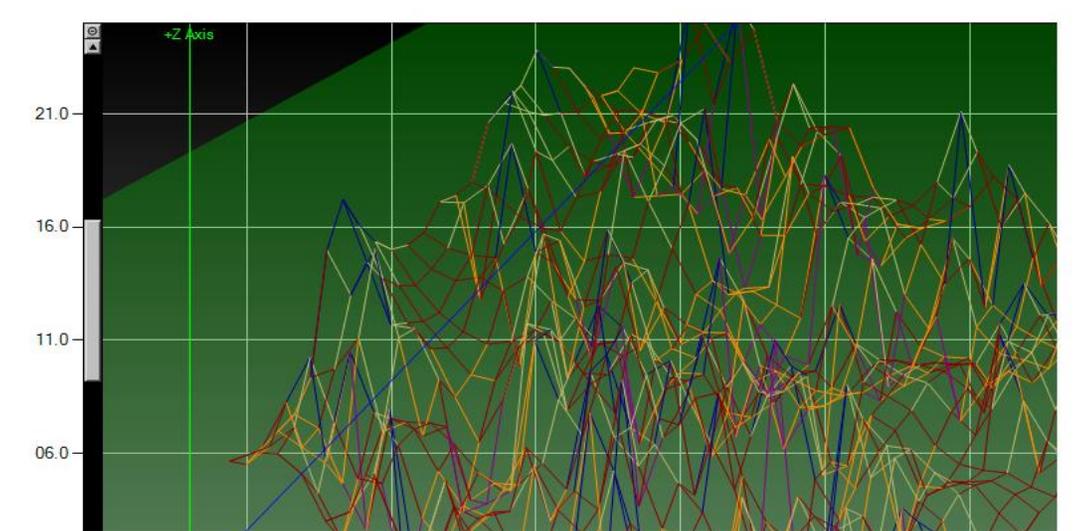
Line Options

Under the color schemes you will see a dropdown list of line options. These options will allow you to display different types of graphs. Spline, Fast Line, Bubble and Line.

Rotations

You can rotate your 3D Line Graph via the X axis and the Y axis with the slider bars located under the graph.

Please note: If you are graphing data and your data is not shown in the graph it is because the X, Y, Z and Ground Layer chart objects are much larger than the graphed data. To fix this either disable those options or zoom into your graph.



Color Options

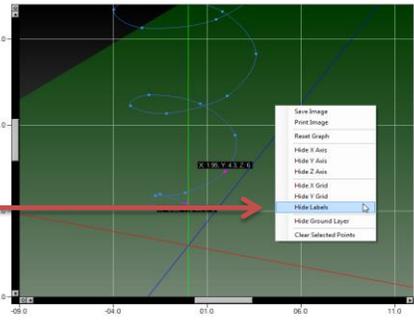
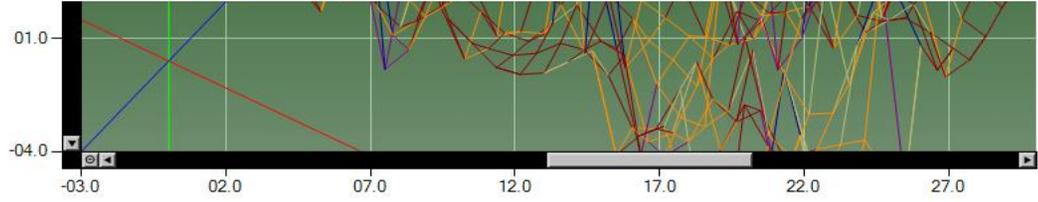
Colors can be changed below the 'Rotation' options. You can customize the graphs in Point Size, Point Color, Line Width and Line Color. There is also an option for 'Color Variant' which will color the data points and lines depending on the graphed data's maximum point (5 color variation).

Zooming

The displayed graph can be zoomed into by LEFT MOUSE CLICKING and HOLDING as you DRAG AND DROP the selection box into the area you would like to zoom into. To zoom out simply DOUBLE CLICK the LEFT MOUSE BUTTON inside the graph or click the minus buttons (-) located inside the graph.

Display Options

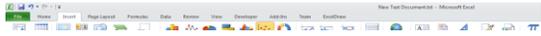
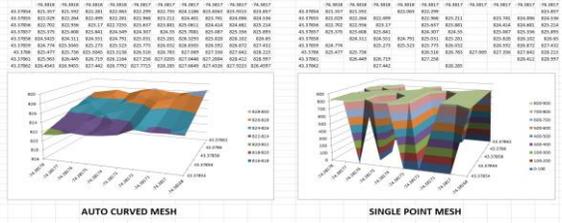
By RIGHT CLICKING on the graph you will bring up the display options for the graph. This includes: Saving the image, Printing the image, Resetting the graph, Hiding the X, Y or Z axis, Hiding the X or Y grid, Showing or hiding labels, Showing or hiding the ground layer (green displays the positive surface and orange displays negative surface) and clearing the selected points (only available with 3D Line View).



Data Into Excel

MESH

After your data is converted you can display the Surface Graph inside of Microsoft Excel. To do this start by pasting your converted data into Excel. The fastest way to show this data is to select your first cell (it should have the text 'Null' or the number '1' in it) and delete that value. Then select any of your X or Y data from your conversions and go to 'Excel Menu> Insert> Charts> Other Charts>' and select '3D Surface'. This will populate your 3D surface graph with the converted data. Option two is to select all the contained data (except for the X and Y values) and graph the selected data.



3D Line

After your data is converted you can display the 3D line graph inside of Microsoft Excel. To do this start by pasting your converted data into Excel. After pasting your data the converted data should automatically be selected. With that data selected go to 'Excel Menu> Insert> Charts> Scatter>' and select 'Scatter with Smooth Lines and Markers'. This will populate your 3D line graph with the converted data. To show your data without a skewed perspective you might need to go into the X and Y axis properties and change their values from 'Auto' to a set number

