Colorline Graph

In this XY line graph, the line color represents the grouped values of a third variable: col(3).
Its values are grouped into a histogram, with the histogram limits/"buckets" in col(4), and the
associated colors in col(5).

3rd Variable: Color
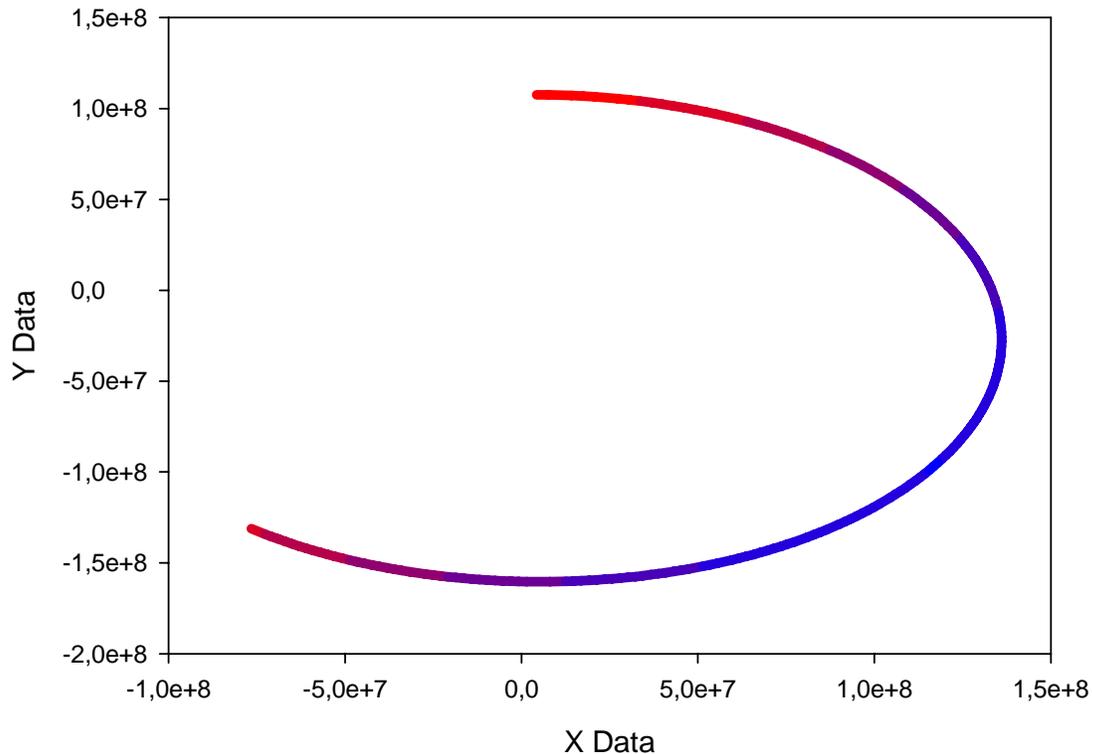
The graph is created as a Multiple Straight Lines plot, XY Pairs. Each column pair represents one
interval or "bucket" of the histogram.

The XY data in the worksheet are separated into pairs of columns ith a User-Defined Transform
(please see the bottom of this page).

After running the transform, columns 9 until the last column need to be plotted as multiple
straight lines, XY pairs. The line style then needs to be changed to solid (or other as desired) with
the line color coming from column 8.

The color assignment uses these two features of SigmaPlot,

1. Color from column
In the a Graph Properties color field droplist, you can select a solid color, a color series, or a
worksheet column which contains "color values" (provided you have entered some there, from the
Worksheet > Graphic Cells > Color dialog).
These graphic cells of the worksheet then contain RGB color values. To see them, double-click on
such a worksheet cell, and you will see e.g. "@rgb(255,0,1)".

2. Write color to the worksheet
You can edit these RGB values manually, and you can write them in a User-Defined Transform
(Analysis > User-Defined).

	1-X(km)	2-Y(km)	3-Z(km)	4-Min-Max Z	5-Temp Calc	6	7	8	9	10	11	12	13
1	-76530000,00	-131200000,00	-86534,00	-3832000,00	0,00	184,56	255,00		--	--	-76530000,00	-131200000,00	--
2	-74670000,00	-132670000,00	-146650,00	1343100,00	--	181,59	218,00		--	--	-74670000,00	-132670000,00	--
3	-72788000,00	-134110000,00	-206720,00		--	178,63	181,00		--	--	-72788000,00	-134110000,00	-72788000,00	-1341
4	-70886000,00	-135510000,00	-266740,00		--	175,68	145,00		--	--	--	--	-70886000,00	-1355
5	-68965000,00	-136870000,00	-326680,00		--	172,72	108,00		--	--	--	--	-68965000,00	-1368
6	-67024000,00	-138200000,00	-386530,00		--	169,77	72,00		--	--	--	--	-67024000,00	-1382
7	-65065000,00	-139490000,00	-446270,00		--	166,83	35,00		--	--	--	--	-65065000,00	-1394
8	-63089000,00	-140740000,00	-505900,00		--	163,89	0,00		--	--	--	--	-63089000,00	-1407
9	-61095000,00	-141950000,00	-565390,00		--	160,96			--	--	--	--	-61095000,00	-1419
10	-59085000,00	-143120000,00	-624720,00		--	158,04			--	--	--	--	-59085000,00	-1431
11	-57059000,00	-144250000,00	-683890,00		--	155,12			--	--	--	--	-57059000,00	-1442
12	-55018000,00	-145350000,00	-742880,00		--	152,21			--	--	--	--	-55018000,00	-1453
13	-52963000,00	-146410000,00	-801670,00		--	149,32			--	--	--	--	-52963000,00	-1464
14	-50894000,00	-147430000,00	-860250,00		--	146,43			--	--	--	--	-50894000,00	-1474
15	-48811000,00	-148410000,00	-918610,00		--	143,56			--	--	--	--	-48811000,00	-1484
16	-46716000,00	-149350000,00	-976730,00		--	140,69			--	--	--	--	--
17	-44609000,00	-150260000,00	-1034600,00		--	137,84			--	--	--	--	--
18	-42490000,00	-151120000,00	-1092200,00		--	135,00			--	--	--	--	--
19	-40360000,00	-151950000,00	-1149500,00		--	132,18			--	--	--	--	--
20	-38220000,00	-152740000,00	-1206500,00		--	129,37			--	--	--	--	--
21	-36070000,00	-153490000,00	-1263300,00		--	126,57			--	--	--	--	--
22	-33911000,00	-154200000,00	-1319700,00		--	123,79			--	--	--	--	--
23	-31744000,00	-154870000,00	-1375700,00		--	121,03			--	--	--	--	--
24	-29569000,00	-155500000,00	-1431500,00		--	118,28			--	--	--	--	--

User-Defined Transform: colorline.xfm

This transform generates data so that a line can be colored according to a third data variable. The number of colors can be varied according to the BucketNum variable. At present, the color range is from pure blue to pure red, with red indicating the highest values.

From the worksheet, on the Analysis tab, in the Transform group, select User-Defined. Open the link to the transform: http://www.systat.de/TT201403/colorline.zip, or copy the following code, and paste it into the Transform Edit window (Ctrl-V), then click on Run.

You can save the transform to an .xfm file on your harddisk.

```
'calculate min max
cell(4;1)=min(col(3))
cell(4;2)=max(col(3))
'Scale values
Zrange=cell(4;2)-cell(4;1)
col(6)=(col(3)-cell(4;1))*255/Zrange
'set buckets
BucketNum=7
col(7)=int({data(255;0;256/BucketNum);0})
'Generate colors
col(8)=rgbcolor(col(7);0;256-col(7))
'Separate the XY values based on color
for i=1 to count(col(7)) do
'defines boundaries, misses the connection
col(7+2*i)=if(col(6)>cell(7;i+1) and col(6)<=cell(7;i);col(1);0/0)
col(8+2*i)=if(col(6)>cell(7;i+1) and col(6)<=cell(7;i);col(2);0/0)
'spackle over the cracks
col(5)={0;col(7+2*i)}
col(7+2*i;2)=if(col(7+2*i;2)=0/0 and
col(5;2)>=min(col(1));col(1;2);col(7+2*i;2))
col(5)={0;col(8+2*i)}
col(8+2*i;2)=if(col(8+2*i;2)=0/0 and
col(5;2)>=min(col(2));col(2;2);col(8+2*i;2))
end for
```

After running the transform, columns 9 until the last column need to be plotted as multiple straight lines, XY pairs. The line style then needs to be changed to solid (or other as desired) with the line color coming from column 8.