Parallel Lines Analysis Macro

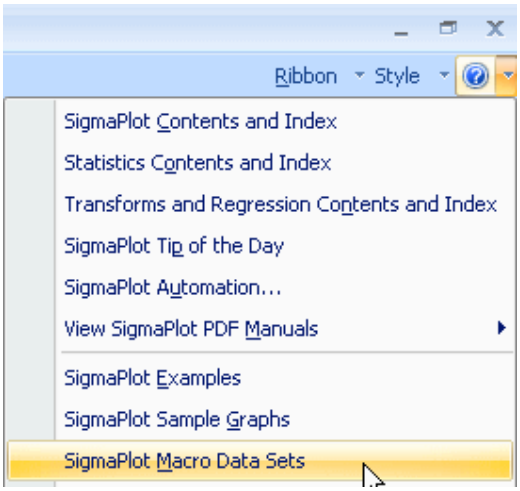
This macro tests XY data pairs for equality of slopes.
If the slopes are found to be insignificantly different then it tests for the equality of y intercepts.
A pooled slope (intercept) is computed if the individual slopes (intercepts) are insignificantly different.

The XY data pairs must be the only data in the worksheet
and be left adjusted.

XY Pairs data format is required.

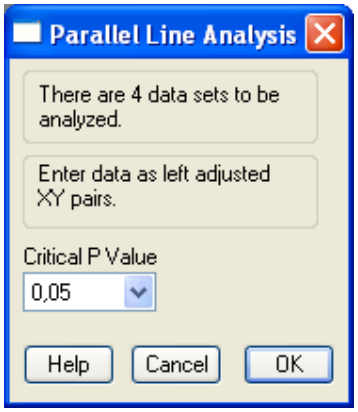
Example

Open the SigmaPlot Macro Data Sets notebook (you can do this from the Help menu), and open the worksheet in the “Parallel Lines Sample Data” section.

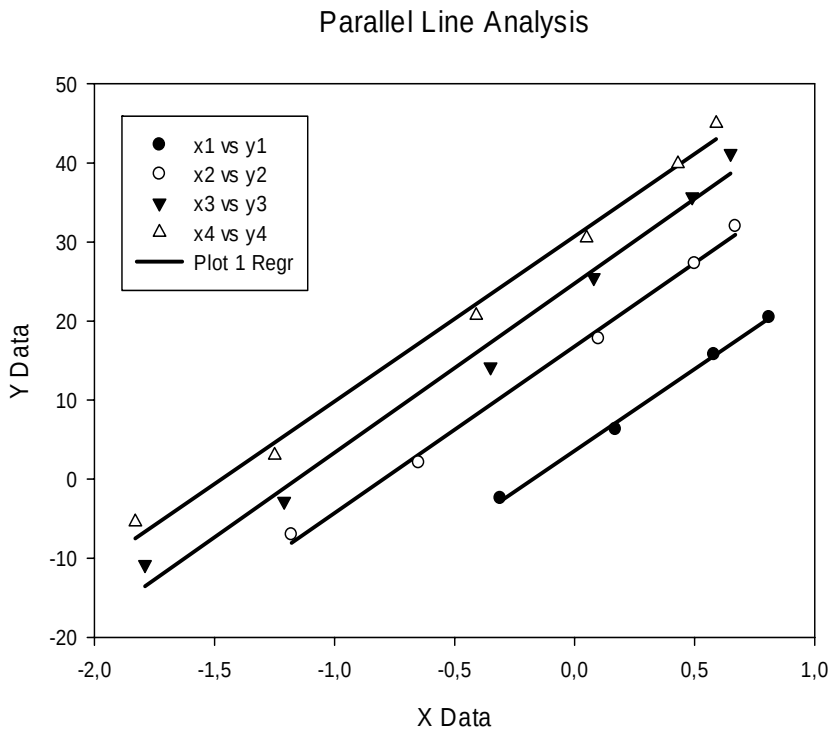


	1-x1	2-y1	3-x2	4-y2	5-x3	6-y3	7-x4	8-y4
1	-0,3100	-2,4000	-1,1800	-7,0000	-1,7900	-10,8000	-1,8300	-5,4000
2	0,1700	6,3000	-0,6500	2,1000	-1,2100	-2,8000	-1,2500	3,0000
3	0,5800	15,8000	0,1000	17,8000	-0,3500	14,2000	-0,4100	20,7000
4	0,8100	20,5000	0,5000	27,3000	0,0800	25,5000	0,0500	30,5000
5			0,6700	32,0000	0,4900	35,7000	0,4300	39,9000
6					0,6500	41,2000	0,5900	45,0000
7								

From the ToolBox ribbon > Macros, open and run the “Parallel Lines” macro.
In the macro dialog, you can select the Critical P Value; 0.05 or 0.25.
The macro auto-detects the pairs of XY columns. Click OK.



The macro created the graph



And it creates a “Parallel Lines Analysis” report:

Test for Equality of Slopes
F = 0,0897 DFnum = 3 DFdenom = 16
P = 0,9646

The line slopes are not significantly different, P = 0,9646. There is a 96% chance that you will be incorrect in saying that the slopes are significantly different.

The data can now be pooled since the slopes are not significantly different. The slope for the pooled data is 21,0929

Test for Equality of Intercepts

F = 367,3743 DFnum = 3 DFdenom = 19
P < 0,0001

The line y intercepts are significantly different, P < 0,0001.There is less than a 0.01% chance that you will be incorrect In saying that the intercepts are significantly different.