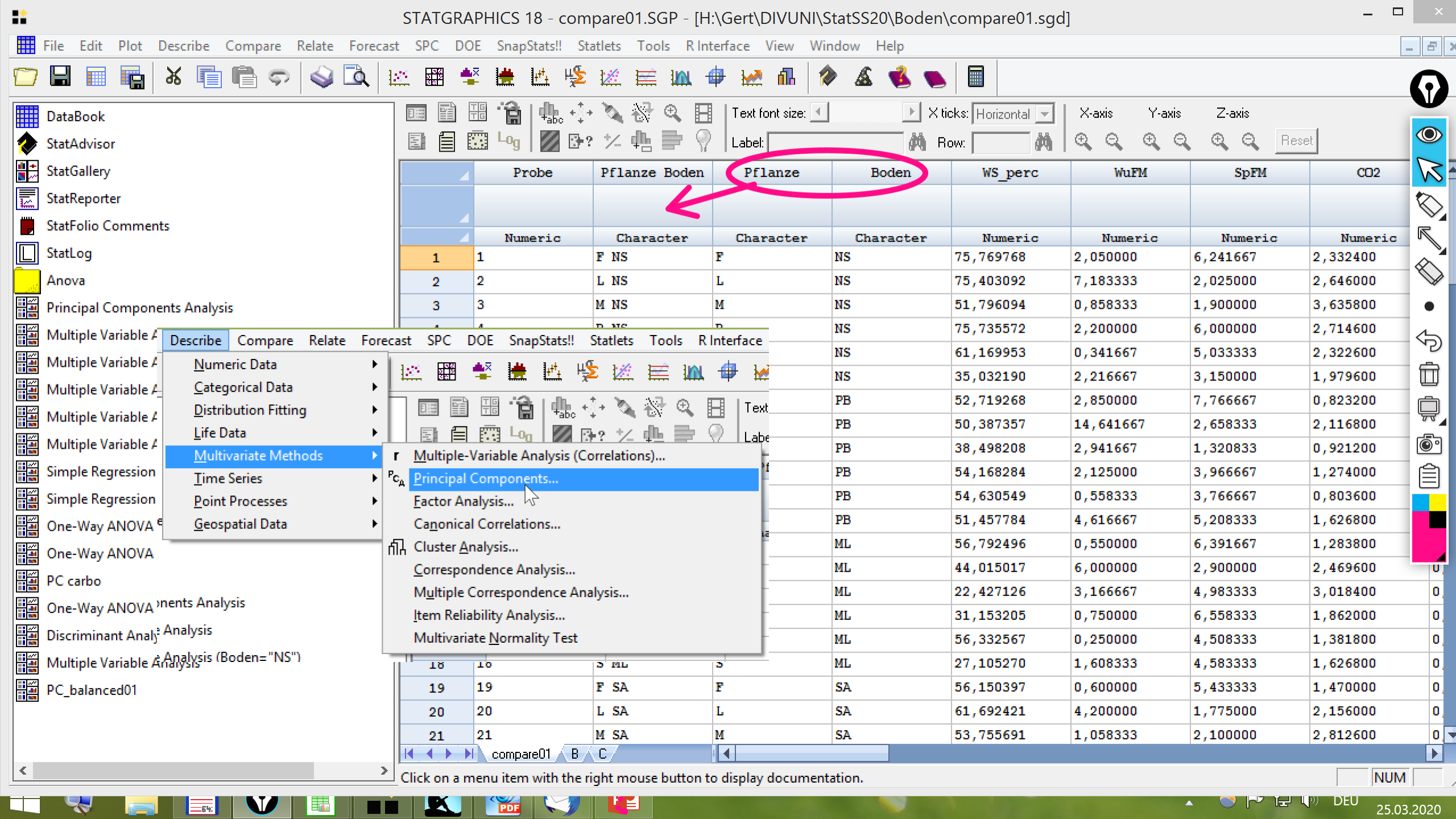
STATGRAPHICS 18 - compare01.SGP - [H:\Gert\DIVUNI\StatSS20\Boden\compare01.sgd]
File Edit Plot Describe Compare Relate Forecast SPC DOE SnapStats!! Statlets Tools R Interface View Window Help
DataBook
StatAdvisor
StatGallery
StatReporter
StatFolio Comments
StatLog
Anova
Principal Components Analysis
Multiple Variable A
Multiple Variable A
Multiple Variable A
Multiple Variable A
Multiple Variable A
Simple Regression
Simple Regression
One-Way ANOVA
One-Way ANOVA
PC carbo
One-Way ANOVA
Discriminant Analysis
Multiple Variable Analysis
PC_balanced01
Describe Compare Relate Forecast SPC DOE SnapStats!! Statlets Tools R Interface
Numeric Data
Categorical Data
Distribution Fitting
Life Data
Multivariate Methods
Time Series
Point Processes
Geospatial Data
Multiple-Variable Analysis (Correlations)...
Principal Components...
Factor Analysis...
Canonical Correlations...
Cluster Analysis...
Correspondence Analysis...
Multiple Correspondence Analysis...
Item Reliability Analysis...
Multivariate Normality Test
Text font size:
X ticks: Horizontal
X-axis Y-axis Z-axis
Label:
Row:
Reset
Probe Pflanze Boden Pflanze Boden WS_perc WuFM SpFM CO2
Numeric Character Character Character Numeric Numeric Numeric Numeric
1 1 F NS F NS 75,769768 2,050000 6,241667 2,332400
2 2 L NS L NS 75,403092 7,183333 2,025000 2,646000
3 3 M NS M NS 51,796094 0,858333 1,900000 3,635800
NS 75,735572 2,200000 6,000000 2,714600
NS 61,169953 0,341667 5,033333 2,322600
NS 35,032190 2,216667 3,150000 1,979600
PB 52,719268 2,850000 7,766667 0,823200
PB 50,387357 14,641667 2,658333 2,116800
PB 38,498208 2,941667 1,320833 0,921200
PB 54,168284 2,125000 3,966667 1,274000
PB 54,630549 0,558333 3,766667 0,803600
PB 51,457784 4,616667 5,208333 1,626800
ML 56,792496 0,550000 6,391667 1,283800
ML 44,015017 6,000000 2,900000 2,469600
ML 22,427126 3,166667 4,983333 3,018400
ML 31,153205 0,750000 6,558333 1,862000
ML 56,332567 0,250000 4,508333 1,381800
ML 27,105270 1,608333 4,583333 1,626800
19 19 F SA F SA 56,150397 0,600000 5,433333 1,470000
20 20 L SA L SA 61,692421 4,200000 1,775000 2,156000
21 21 M SA M SA 53,755691 1,058333 2,100000 2,812600
compare01 B C
Click on a menu item with the right mouse button to display documentation.
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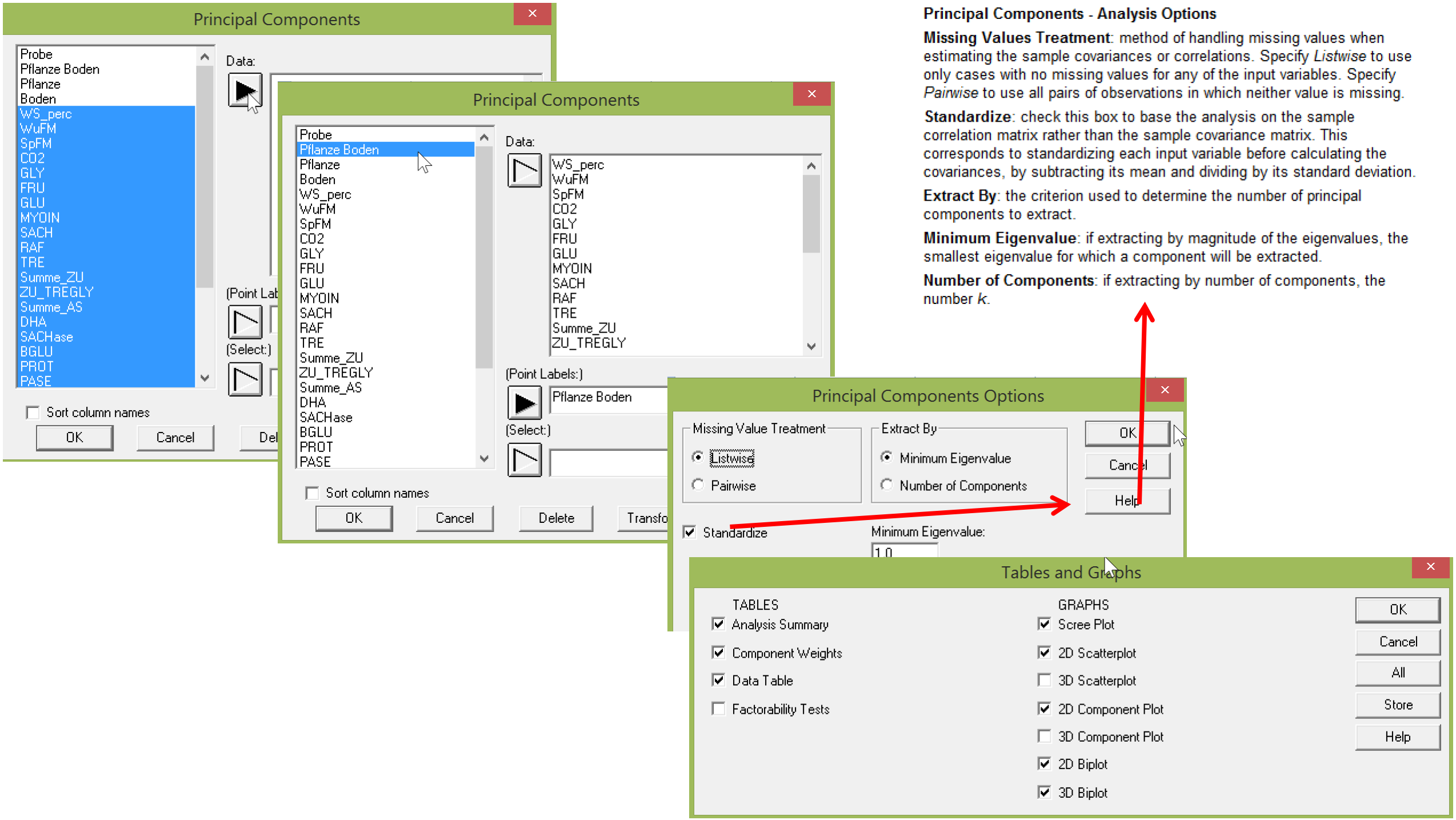
25.03.2020



Principal Components - Analysis Options

Missing Values Treatment: method of handling missing values when estimating the sample covariances or correlations. Specify *Listwise* to use only cases with no missing values for any of the input variables. Specify *Pairwise* to use all pairs of observations in which neither value is missing.

Standardize: check this box to base the analysis on the sample correlation matrix rather than the sample covariance matrix. This corresponds to standardizing each input variable before calculating the covariances, by subtracting its mean and dividing by its standard deviation.

Extract By: the criterion used to determine the number of principal components to extract.

Minimum Eigenvalue: if extracting by magnitude of the eigenvalues, the smallest eigenvalue for which a component will be extracted.

Number of Components: if extracting by number of components, the number *k*.

STATGRAPHICS 18 - compare01.SGP - [Principal Components Analysis]

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- StatLog
- Anova
- PCA
  - Principal Components Analysis
  - One-Way ANOVA - 100- PC_1_max by Boden
  - One-Way ANOVA - 100 -PC_2_max by Boden
  - One-Way ANOVA - 100- PC_3_max by Boden
- Multiple Variable Analysis
- Multiple Variable Analysis (Boden="NS")
- Multiple Variable Analysis (Boden="PB")
- Multiple Variable Analysis (Boden="ML")
- Multiple Variable Analysis (Boden="SA")
- Simple Regression - CO2 vs. Summe_AS ((Boden="ML'
- Simple Regression - CO2 vs. Summe_AS ((Boden="NS"
- PC carbo
- One-Way ANOVA - PC_carbo_1 by Boden
- Discriminant Analysis
- Multiple Variable Analysis
- PC_balanced01

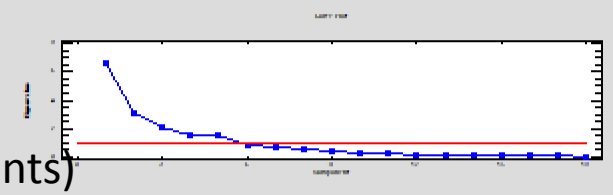
Text font size: X ticks: Horizontal X-axis Y-axis Z-axis

Label: Row: Reset

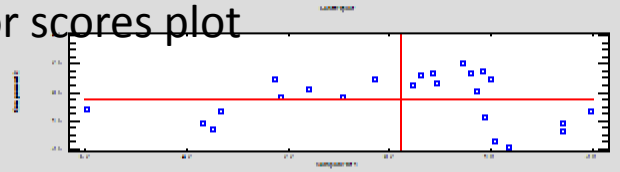
Principal Components Analysis

Data variables:
WS_perc
WuFM
SpFM
CO2
GLY
FRU

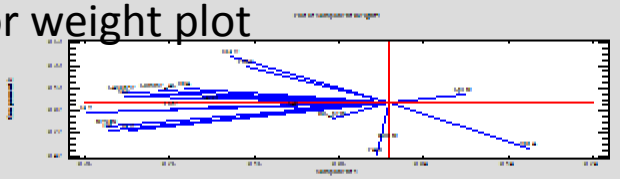
The red line is the Eigenvalue < 1 boundary
(>1 values signify irrelevant principal components)



Factor scores plot



Factor weight plot



2D biplot

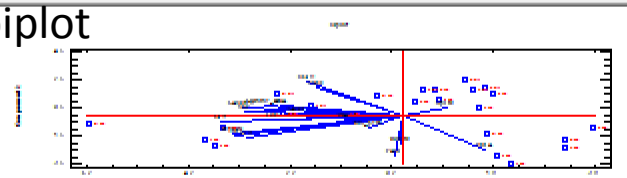


Table of Component Weights

	Component 1	Component 2	Component 3	Component 4
WS_perc	-0,0661636	-0,144969	0,562383	-0,0
WuFM	-0,000921234	-0,330041	-0,208163	-0,0
SpFM	0,0884215	0,0819962	0,218464	-0,1
CO2	-0,313029	0,0506719	-0,0547858	-0,1

Table of Principal Components

Row	Component 1	Component 2	Component 3	Component 4
1	-3,67463	-2,15983	2,6657	-0,68122
2	-3,86479	-1,74175	0,833307	0,206587
3	-6,16435	-0,669003	0,124658	-1,97732
4	-2,32326	0,0762055	1,55944	-0,257208

Factorability Tests

Kaiser-Meyer-Olkin Measure of Sampling Adequacy
KMO = 0,446819

Bartlett's Test of Sphericity
Chi-Square = 395,045
D.F. = 153
P-Value = 0,0

Use the right mouse button to select options

NUM

DEU 08:04 26.03.2020

STATGRAPHICS 18 - compare01.SGP

File Edit Plot Describe Compare Relate Forecast SPC DOE SnapStats!! Statlets Tools R Interface View Window Help

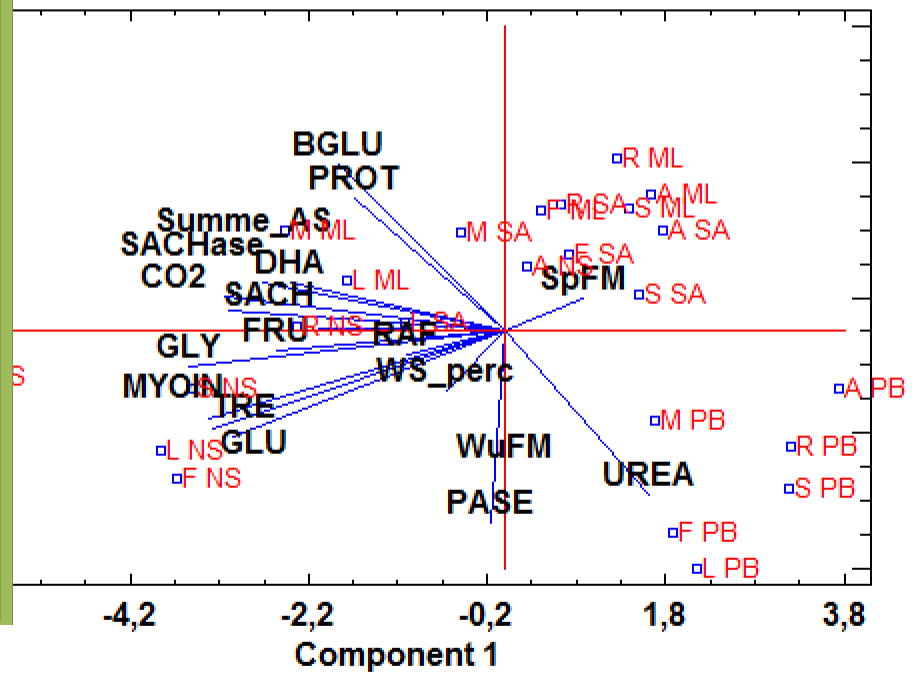
DataBook
StatAdvisor
StatGallery
StatReporter
StatFolio Comments
PC_balanced01
Principal Components Analysis

Store the PCAs !

Text font size: X ticks: Horizontal X-axis Y-axis Z-axis
Label: Row: Reset

Principal Components Analysis

Biplot



Point Identification

Probe
Pflanze Boden
Pflanze
Boden
WS_perc
WuFM
SpFM
CO2
GLY
FRU
GLU
MYOIN
SACH
RAF
TRE
Summe_ZU
ZU_TREGLY
Summe_AS
DHA
SACHase

Sort column names

Identify by: Pflanze Boden

Point Labels
- No labels on graph
- Click point to label
- Label unusual points
- Label all points

Fonts...
Vertical

Label Position
- Top left / Top center / Top right
- Center left / Center / Center right
- Bottom left / Bottom center / Bottom right

OK Cancel Delete Help

Use the right mouse button to select options

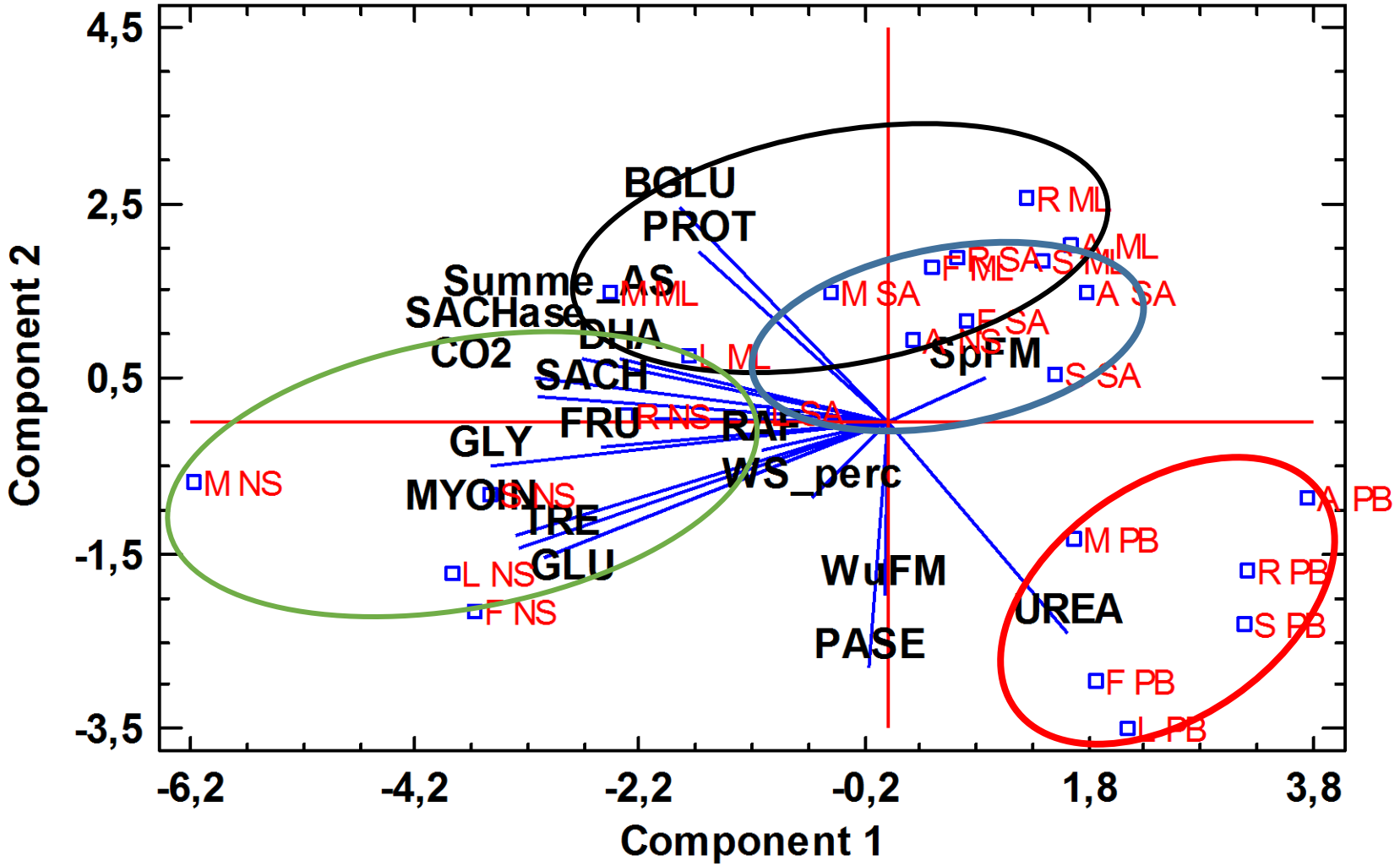
NUM

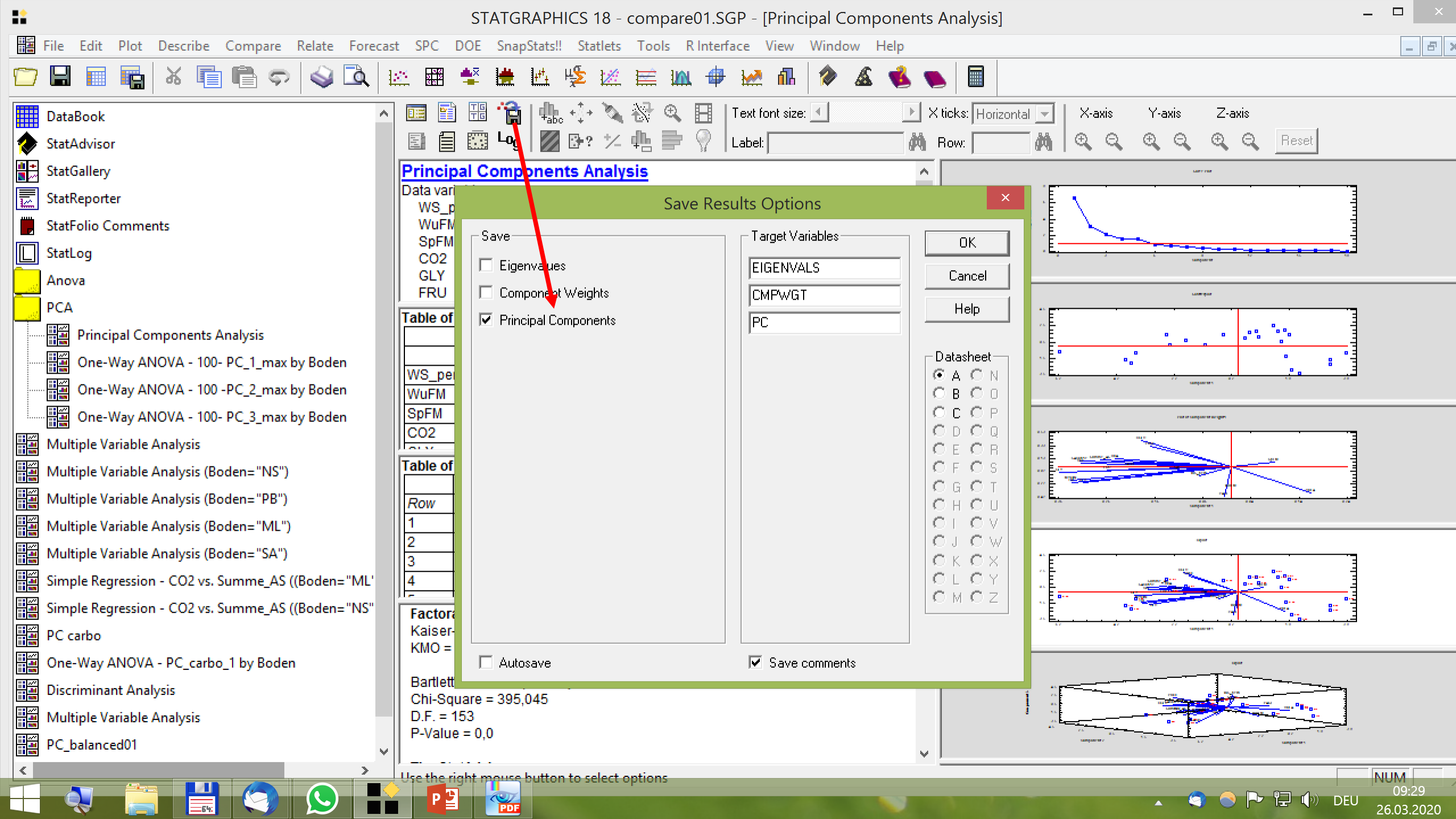
DEU 15:56 25.03.2020

PCA (Z-transformed)

Biplot

Centriods to be calculated by means of Anova




STATGRAPHICS 18 - compare01.SGP - [Principal Components Analysis]
File Edit Plot Describe Compare Relate Forecast SPC DOE SnapStats!! Statlets Tools R Interface View Window Help
DataBook
StatAdvisor
StatGallery
StatReporter
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StatLog
Anova
PCA
Principal Components Analysis
One-Way ANOVA - 100- PC_1_max by Boden
One-Way ANOVA - 100 -PC_2_max by Boden
One-Way ANOVA - 100- PC_3_max by Boden
Multiple Variable Analysis
Multiple Variable Analysis (Boden="NS")
Multiple Variable Analysis (Boden="PB")
Multiple Variable Analysis (Boden="ML")
Multiple Variable Analysis (Boden="SA")
Simple Regression - CO2 vs. Summe_AS ((Boden="ML'
Simple Regression - CO2 vs. Summe_AS ((Boden="NS"
PC carbo
One-Way ANOVA - PC_carbo_1 by Boden
Discriminant Analysis
Multiple Variable Analysis
PC_balanced01
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Principal Components Analysis
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WuFM
SpFM
CO2
GLY
FRU
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SpFM
CO2
Table of
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1
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3
4
Factora
Kaiser-
KMO =
Bartlett
Chi-Square = 395,045
D.F. = 153
P-Value = 0,0
Save Results Options
Save
Eigenvalues
Component Weights
Principal Components
Target Variables
EIGENVALS
CMPWGT
PC
OK
Cancel
Help
Datasheet
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
Autosave
Save comments
Use the right mouse button to select options
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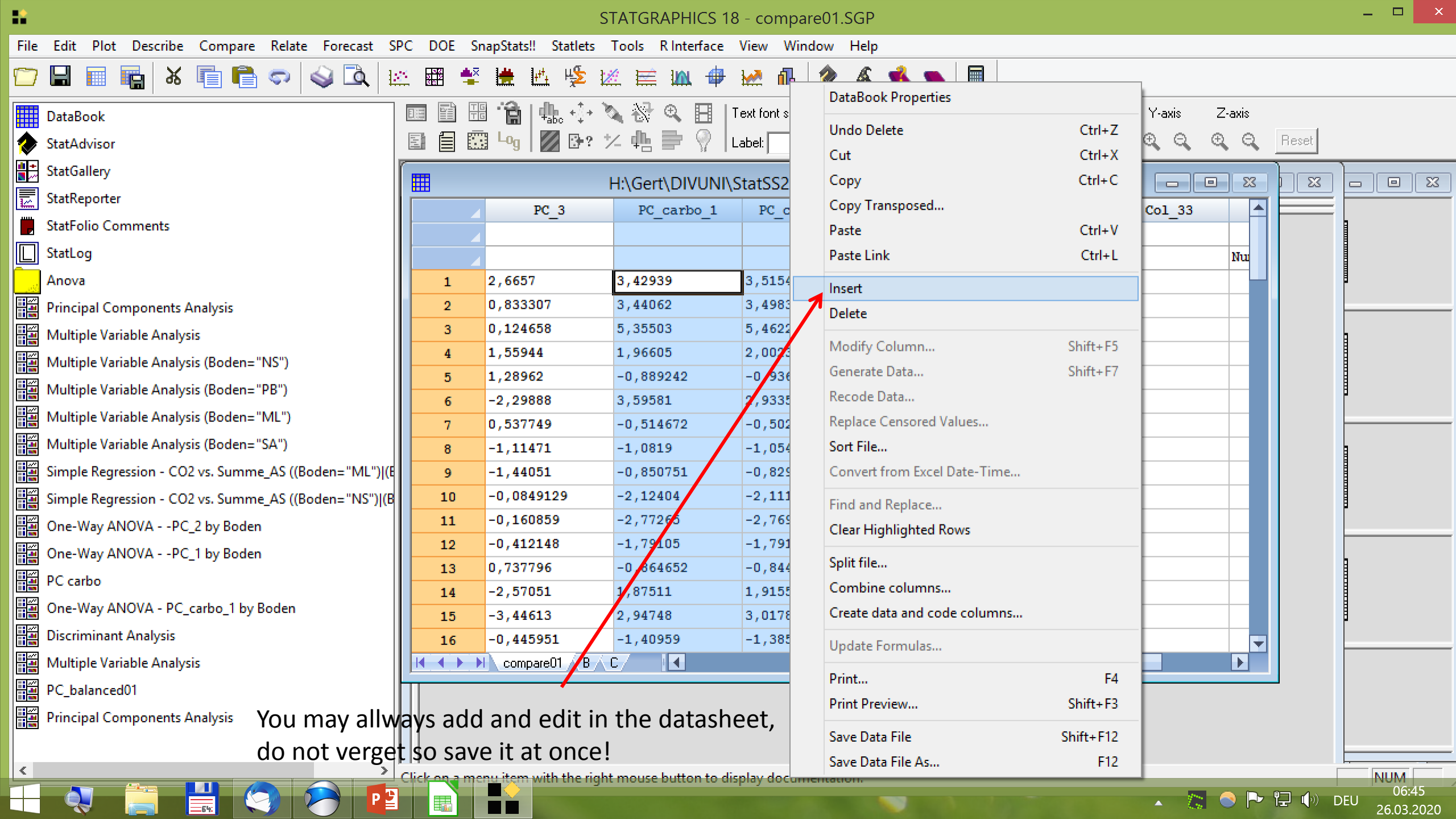
26.03.2020


STATGRAPHICS 18 - compare01.SGP
File Edit Plot Describe Compare Relate Forecast SPC DOE SnapStats!! Statlets Tools R Interface View Window Help
DataBook
StatAdvisor
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Principal Components Analysis
Multiple Variable Analysis
Multiple Variable Analysis (Boden="NS")
Multiple Variable Analysis (Boden="PB")
Multiple Variable Analysis (Boden="ML")
Multiple Variable Analysis (Boden="SA")
Simple Regression - CO2 vs. Summe_AS ((Boden="ML")|(B
Simple Regression - CO2 vs. Summe_AS ((Boden="NS")|(B
One-Way ANOVA - -PC_2 by Boden
One-Way ANOVA - -PC_1 by Boden
PC carbo
One-Way ANOVA - PC_carbo_1 by Boden
Discriminant Analysis
Multiple Variable Analysis
PC_balanced01
Principal Components Analysis
H:\Gert\DIVUNI\StatSS2
PC_3
PC_carbo_1
1 2,6657 3,42939
2 0,833307 3,44062
3 0,124658 5,35503
4 1,55944 1,96605
5 1,28962 -0,889242
6 -2,29888 3,59581
7 0,537749 -0,514672
8 -1,11471 -1,0819
9 -1,44051 -0,850751
10 -0,0849129 -2,12404
11 -0,160859
12 -0,412148 -1,79105
13 0,737796
14 -2,57051 1,87511
15 -3,44613 2,94748
16 -0,445951 -1,40959
compare01
B
C
DataBook Properties
Undo Delete Ctrl+Z
Cut Ctrl+X
Copy Ctrl+C
Copy Transposed...
Paste Ctrl+V
Paste Link Ctrl+L
Insert
Delete
Modify Column... Shift+F5
Generate Data... Shift+F7
Recode Data...
Replace Censored Values...
Sort File...
Convert from Excel Date-Time...
Find and Replace...
Clear Highlighted Rows
Split file...
Combine columns...
Create data and code columns...
Update Formulas...
Print... F4
Print Preview... Shift+F3
Save Data File Shift+F12
Save Data File As... F12
Col_33
Y-axis
Z-axis
Reset
Text font s
Label:
You may allways add and edit in the datasheet,
do not verget so save it at once!
Click on a menu item with the right mouse button to display documentation.
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06:45
26.03.2020

STATGRAPHICS 18 - compare01.SGP

File Edit Plot Describe Compare Relate Forecast SPC DOE SnapStats!! Statlets Tools R Interface View Window Help

- DataBook
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- StatLog
- Anova
- Principal Components Analysis
- Multiple Variable Analysis
- Multiple Variable Analysis (Boden="NS")
- Multiple Variable Analysis (Boden="PB")
- Multiple Variable Analysis (Boden="ML")
- Multiple Variable Analysis (Boden="SA")
- Simple Regression - CO2 vs. Summe_AS ((Boden="ML")|(B
- Simple Regression - CO2 vs. Summe_AS ((Boden="NS")|(B
- One-Way ANOVA - -PC_2 by Boden
- One-Way ANOVA - -PC_1 by Boden
- PC carbo
- One-Way ANOVA - PC_carbo_1 by Boden
- Discriminant Analysis
- Multiple Variable Analysis
- PC_balanced01
- Principal Components Analysis

Text font size: X ticks: Horizontal X-axis Y-axis Z-axis Label: Row: Reset

H:\Gert\DIVUNI\StatSS20\Boden\compare01.sgd

	PC_3	PC_1_max	PC_2_max	PC_3_max	PC_carbo_1	PC_carbo_a_1
	Principal Components				Principal Components	ohne Raf
	Numeric	Numeric	Numeric	Numeric	Numeric	Numeric
1	2,6657	25,115853990683	21,998148605078	100	3,42939	3,51541
2	0,833307	23,197630667363	28,921504498492	70,019404672501	3,44062	3,49833
3	0,124658	0,0010087417560	46,686069329606	58,424883792844	5,35503	5,46227
4	1,55944	38,747687459524	59,026634915851	81,899890378332	1,96605	2,00237
5	1,28962	64,626109868117	73,513361341615	77,485344236599	-0,889242	-0,936908
6	-2,29888	26,572678834782	43,873323518842	18,772302693257	3,59581	2,93353
7	0,537749	81,067430351425	8,9131914372156	65,183649027394	-0,514672	-0,502821
8	-1,11471	83,870622817335	0,0016559883020	38,147033752022	-1,0819	-1,05442
9	-1,44051	79,043490892070	35,882948122854	32,816475319579	-0,850751	-0,829545
10	-0,0849129	94,563083683198	29,627121114016	54,996001263103	-2,12404	-2,1116
11	-0,160859	100	43,644548734907	53,753413406239	-2,77265	-2,76991
12	-0,412148	94,324919754593	19,659727523684	49,641962522476	-1,79105	-1,79199
13	0,737796	66,348001783455	87,040732344266	68,456706801288	-0,864652	-0,844443
14	-2,57051	44,312209608467	70,165068913953	14,328043678510	1,87511	1,91552
15	-3,44613	37,309726086263	82,138344574733	0,0016361443930	2,94748	3,01788

compare01 B C

Boden

Decentered and max-Standardized PCA- Metavariables

Click on a menu item with the right mouse button to display documentation.

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STATGRAPHICS 18 - compare01.SGP

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- StatLog
- Anova
- PCA
  - Principal Components Analysis
  - One-Way ANOVA - 100- PC_1_max by Boden
  - One-Way ANOVA - PC_2_max by Boden
  - One-Way ANOVA - PC_3_max by Boden
- Multiple Variable Analysis
- Multiple Variable Analysis (Boden="NS")
- Multiple Variable Analysis (Boden="PB")
- Multiple Variable Analysis (Boden="ML")
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- Simple Regression - CO2 vs. Summe_AS ((Boden="NS"
- PC carbo
- One-Way ANOVA - PC_carbo_1 by Boden
- Discriminant Analysis
- Multiple Variable Analysis
- PC_balanced01

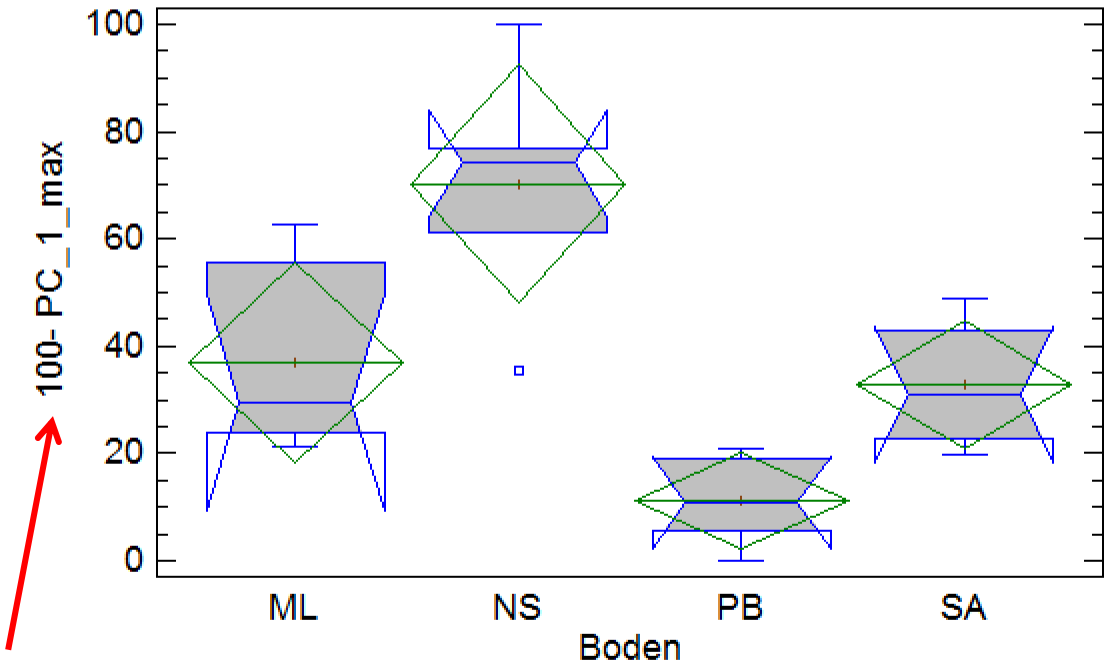
Text font size: X ticks: Horizontal X-axis Y-axis Z-axis Label: Row: Reset

One-Way ANOVA - 100- PC_1_max by Boden

Carbon Sources & Respiration

Box-and-Whisker Plot

Quantification / Anova of Cluster Centroids



100 – PCA_max, because Vector pointed in the wrong direction !

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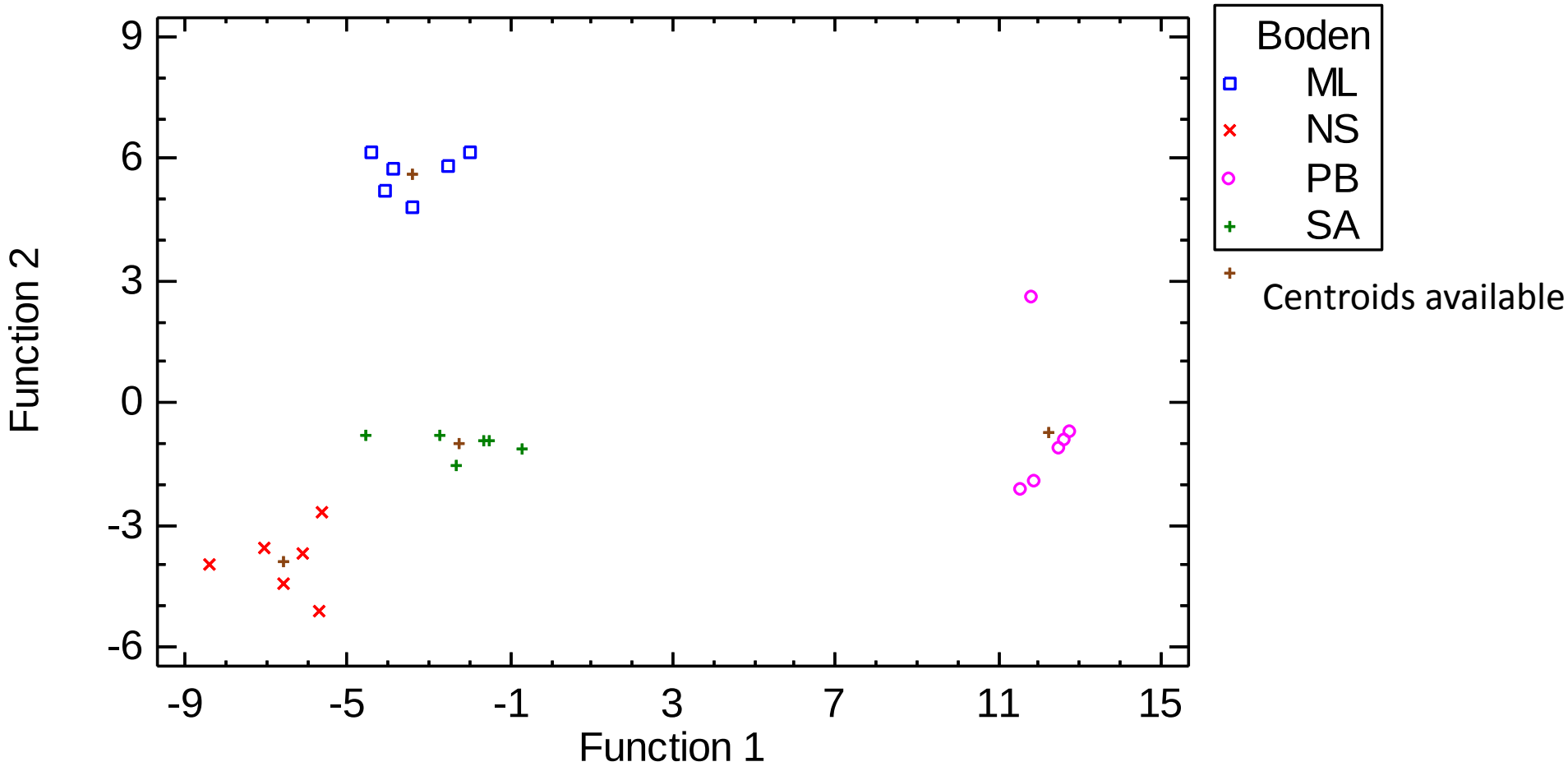
Plot of Discriminant Functions



The StatAdvisor

This pane shows the functions used to classify observations. There is a function for each of the 4 levels of Boden. For example, the function used for the first level of Boden is

-91,9749 + 25,4241*CO2 - 129,139*GLY + 13,5946*TRE + 7,4008*DHA + 4,48987*BGLU + 0,707964*PROT + 0,309004*PASE - 1,08915*UREA

NMDS: non (para) metric dimensional scaling (Primer6, R)

Resemblance: D1 Euclidean distance