สื่อการสอนเรื่อง **“Chemometrics”** นี้

จัดทำขึ้นโดย ดร.ศุมาพร เกษมสำราญ

สำหรับประกอบการสัมมนา

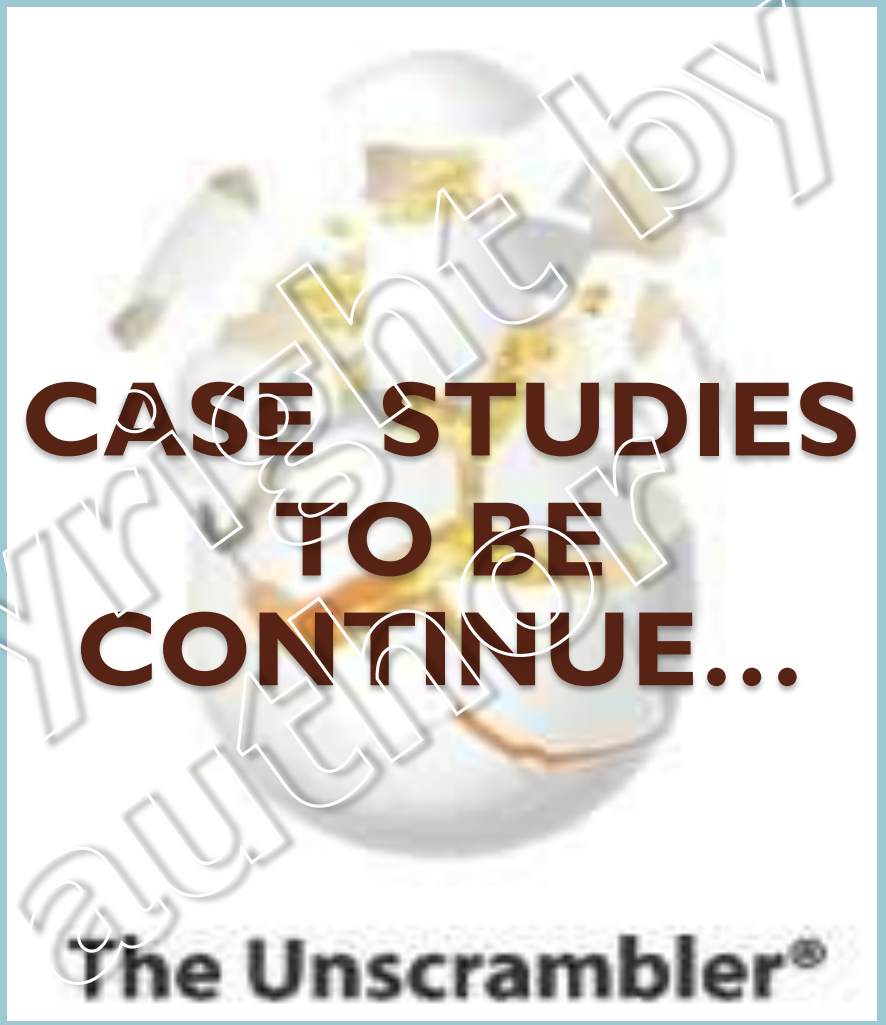
หัวข้อ **“**การใช้ **Unscrambler** วิเคราะห์ข้อมูลเพื่อหาองค์ประกอบของผลิตภัณฑ์**”**

จัดโดยบริษัท จาร์พา เท็คเซ็นเตอร์ จำกัด

วันพฤหัสบดี ที่ 11 กันยายน 2551

มหาวิทยาลัยเกษตรศาสตร์

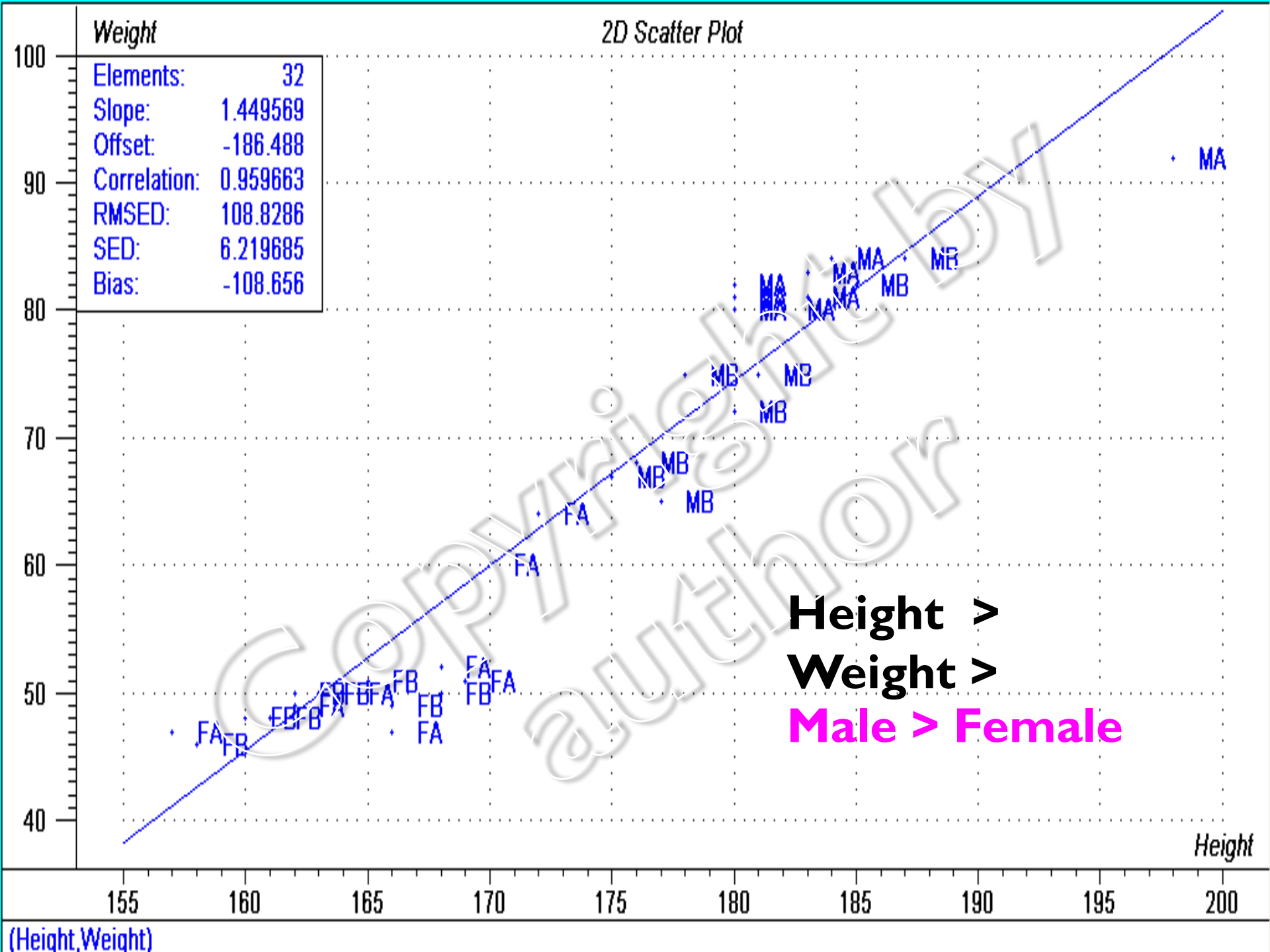
CASE STUDIES TO BE CONTINUE…



Case 1. Relationship of variables

- "PEOPLE" - data
- (Multivariate Data Analysis-in practice, CAMO)

Height	**cm.**
Weight	**kg.**
Hair length	**Short = -1, long = +1**
Shoe size	**EU standard**
Age	**Years**
Income	**Euro**
Beer consumption	**Liters per year**
Wine consumption	**Liters per year**
Sex	**Male = -1, female = +1**
Swimming ability	**500 m timed swimming**
Regional belonging	**A=-1=Scandinavia, B=+1=Mediterranean**
IQ	**EU standard**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Elements: 32
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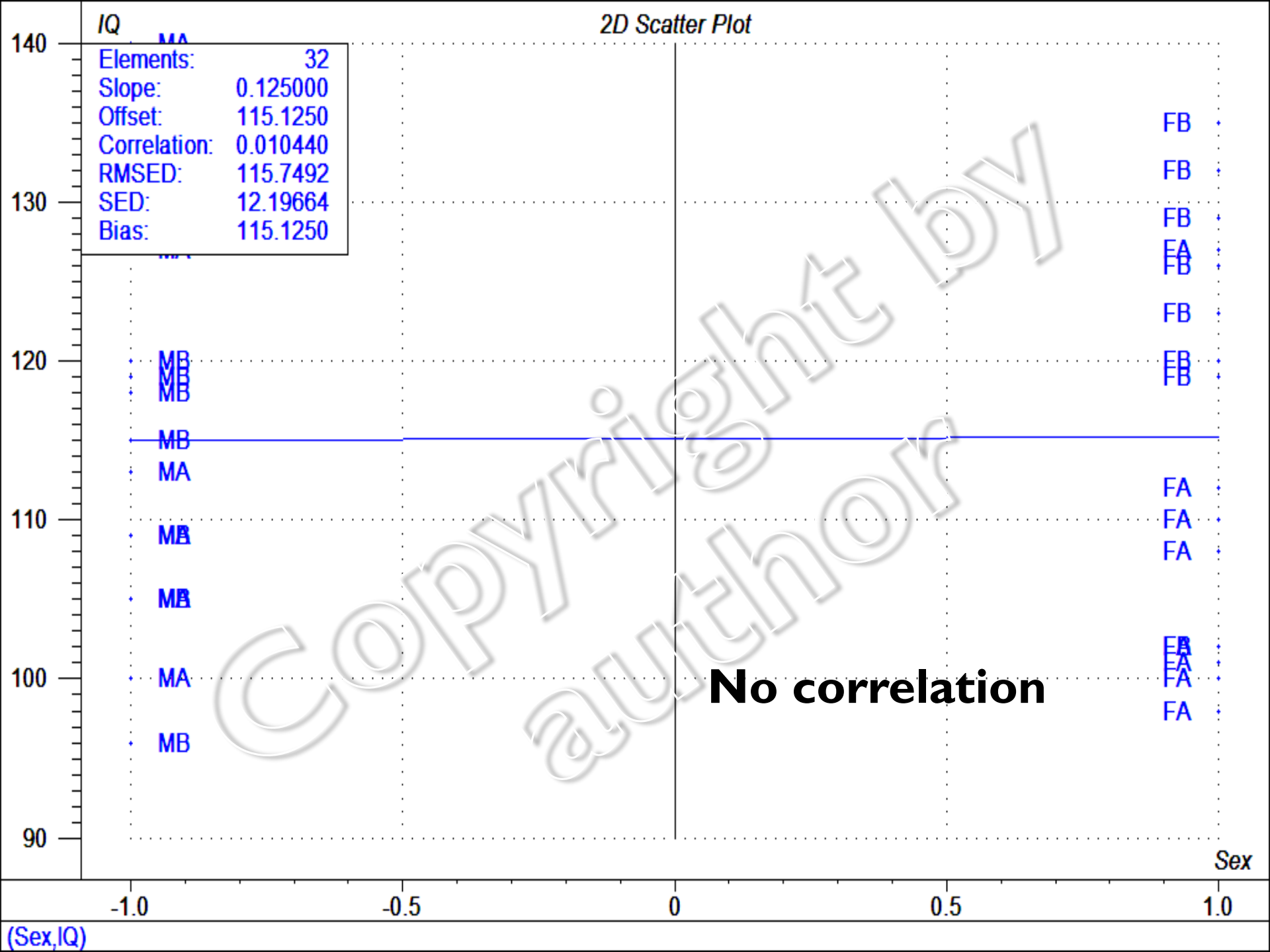
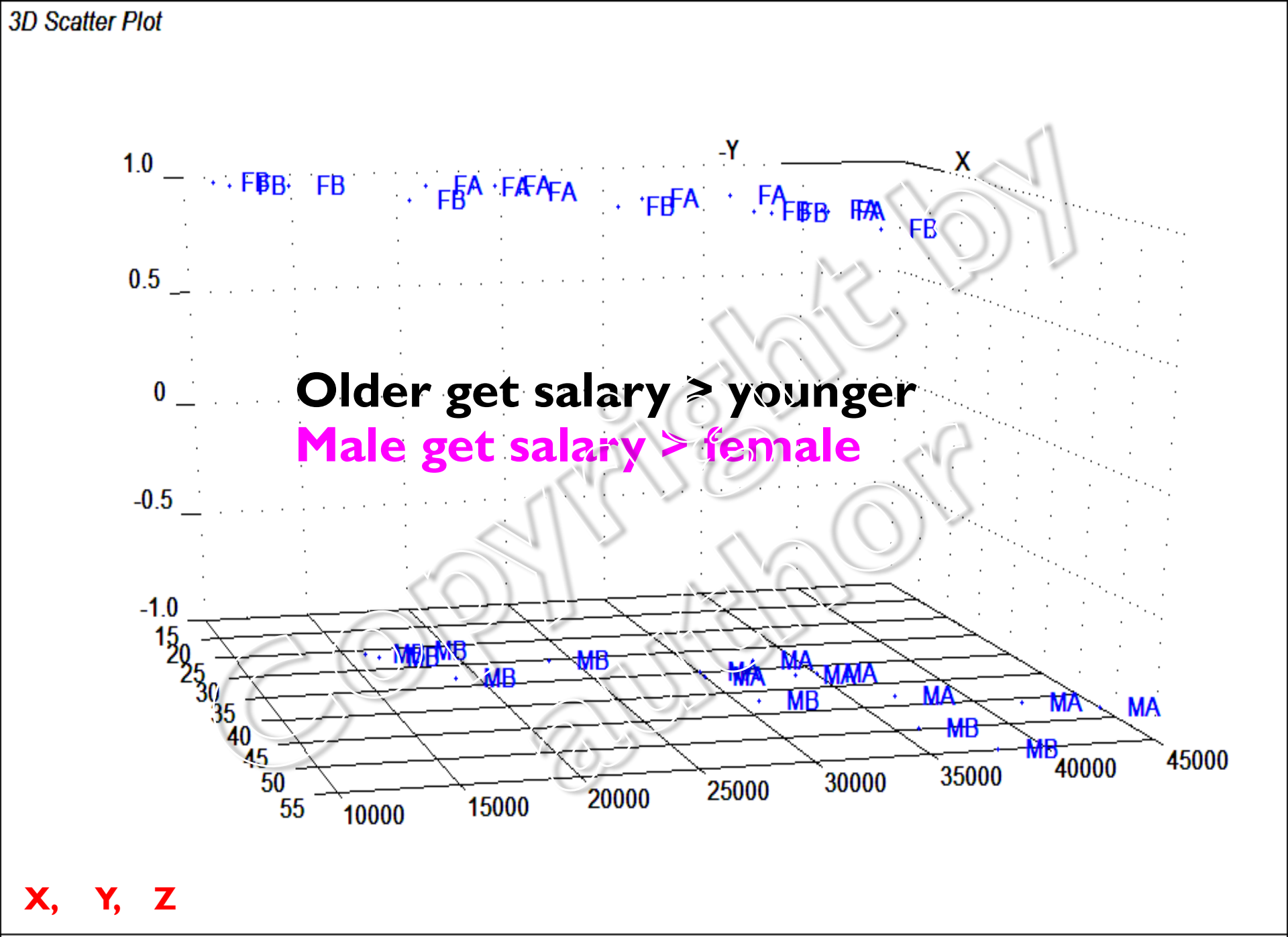
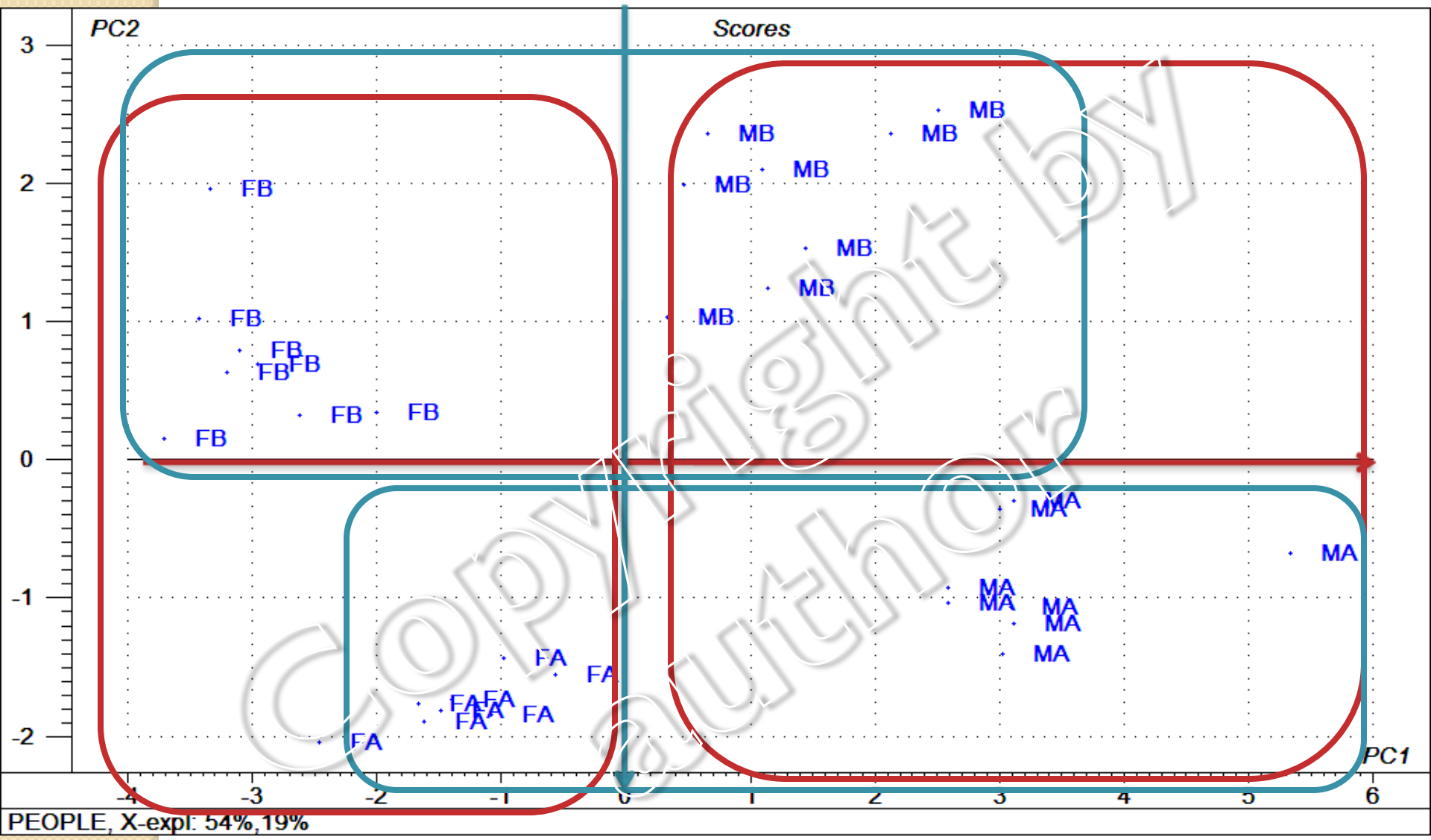
Offset: -186.488
Correlation: 0.959663
RMSED: 108.8286
SED: 6.219685
Bias: -108.656
Height
(Height,Weight)
Height >
Weight >
Male > Female
Copyright by author

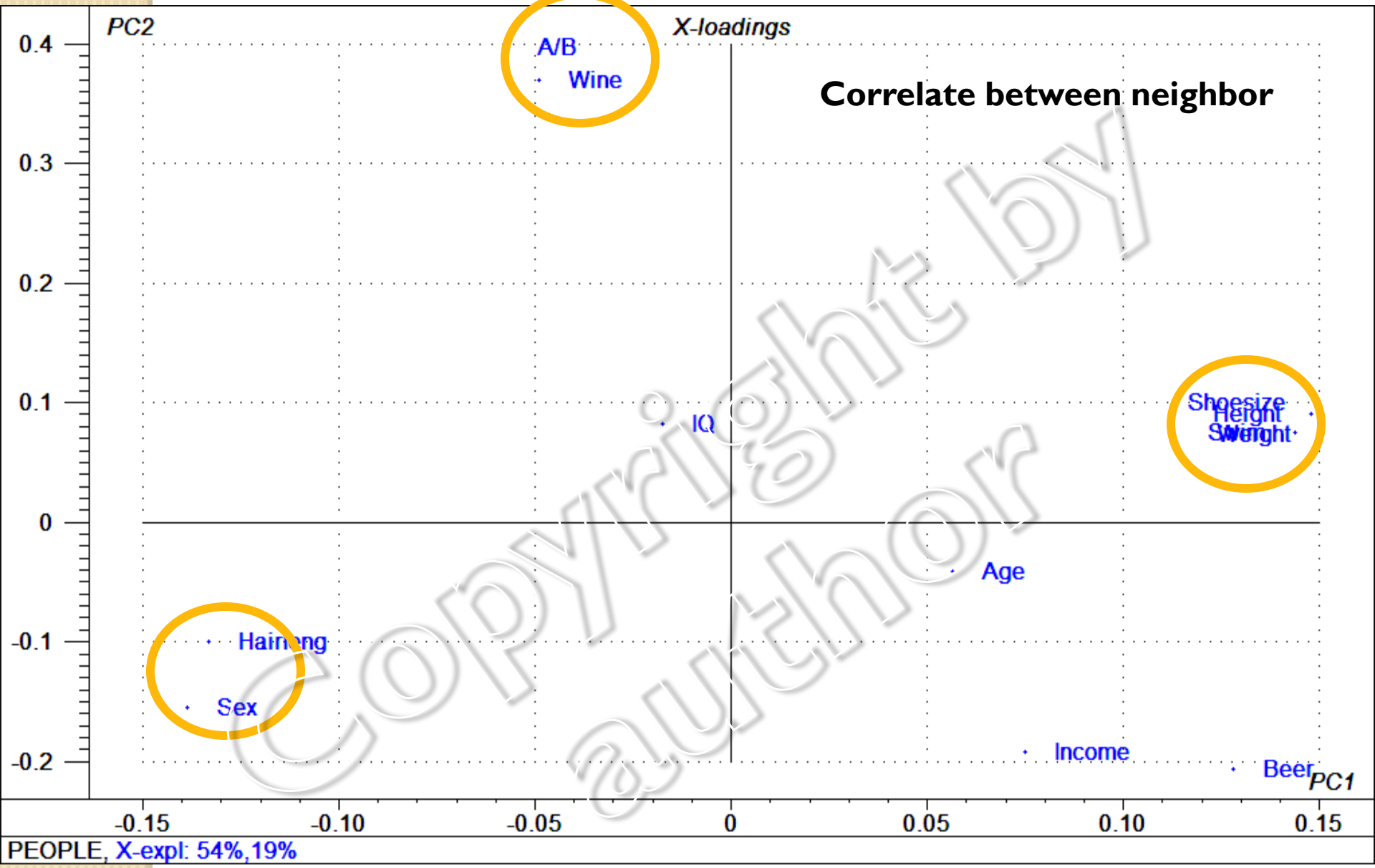




PC 1 : Sex discrimination

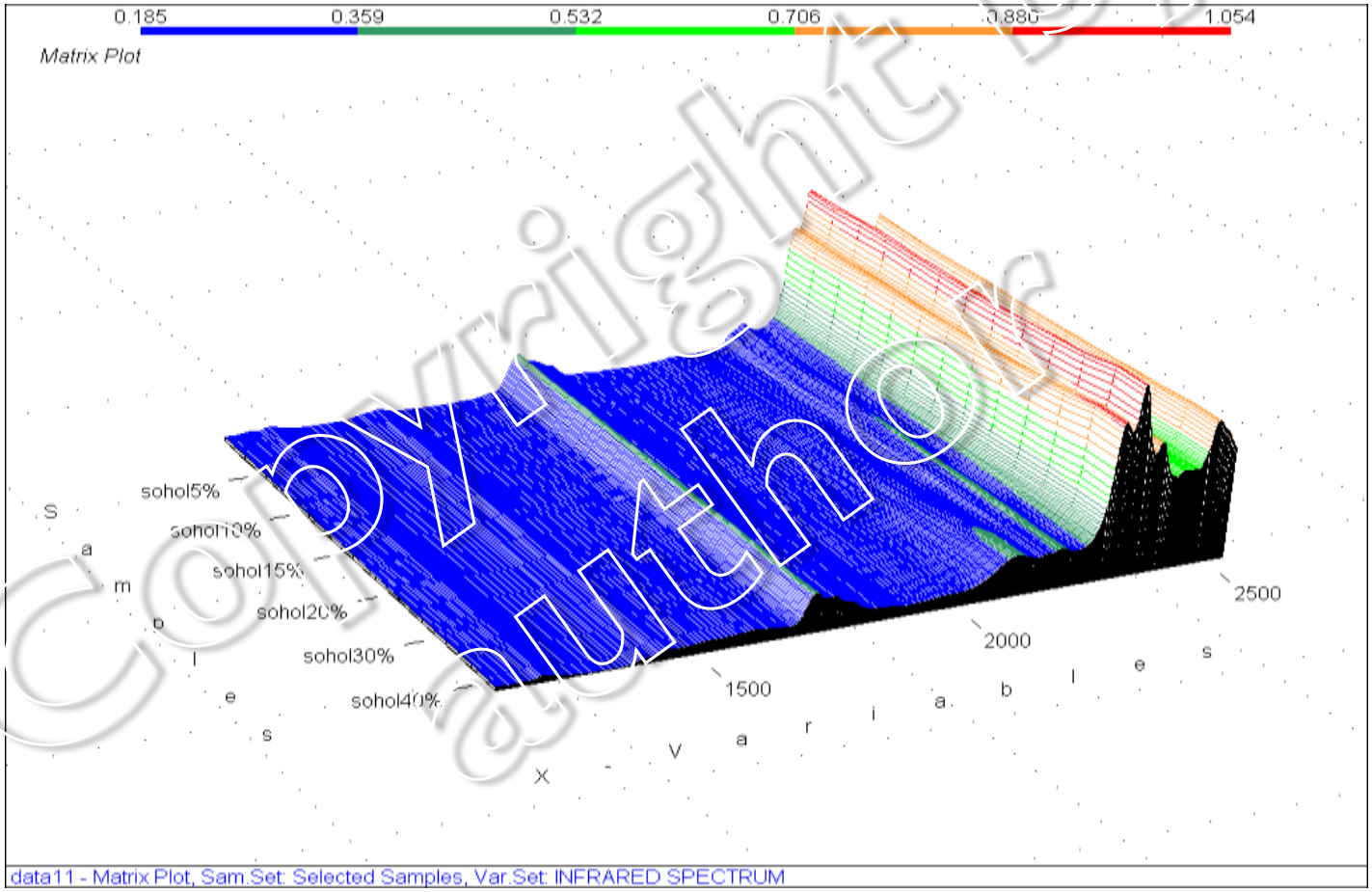


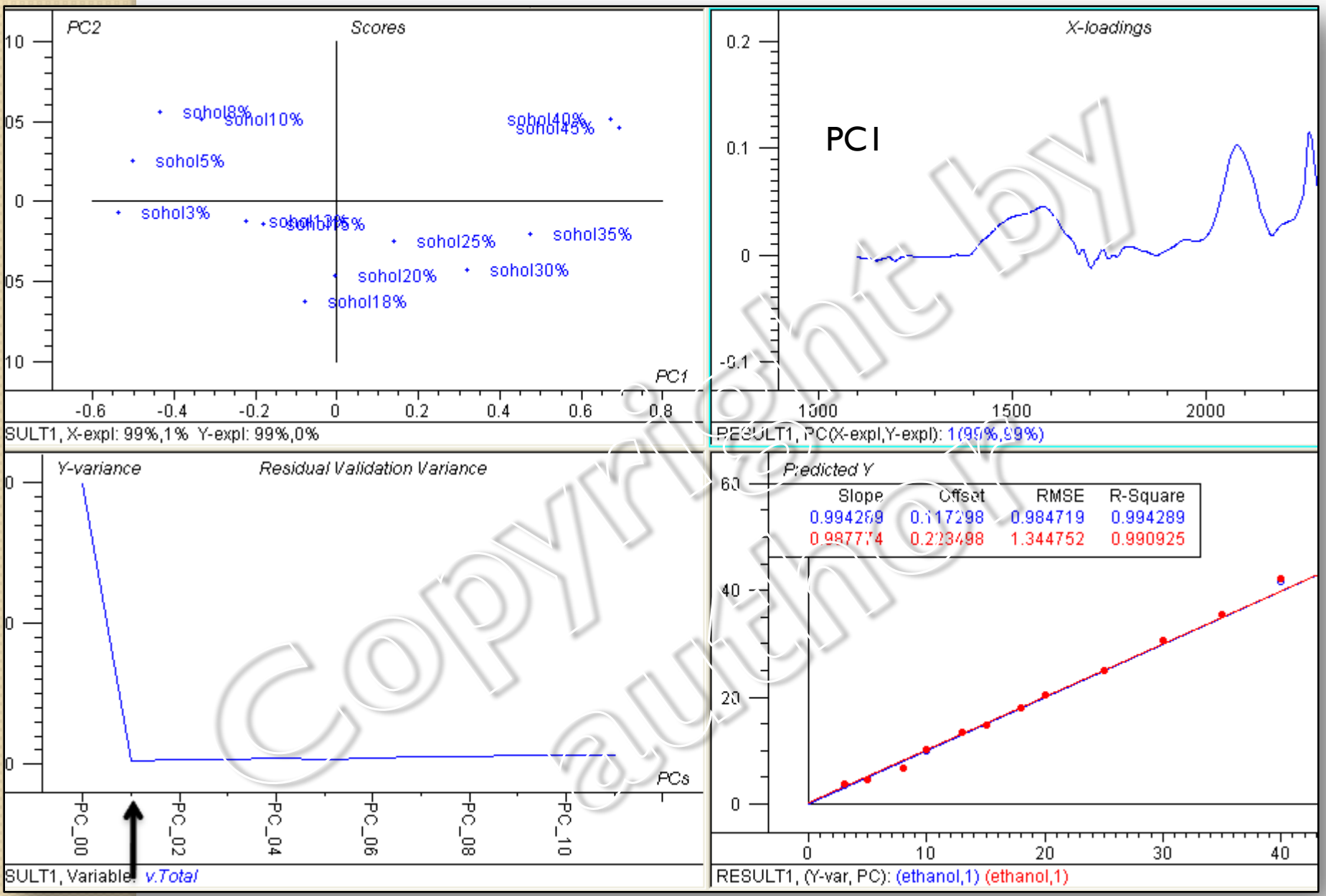
PC 2 : Region discrimination

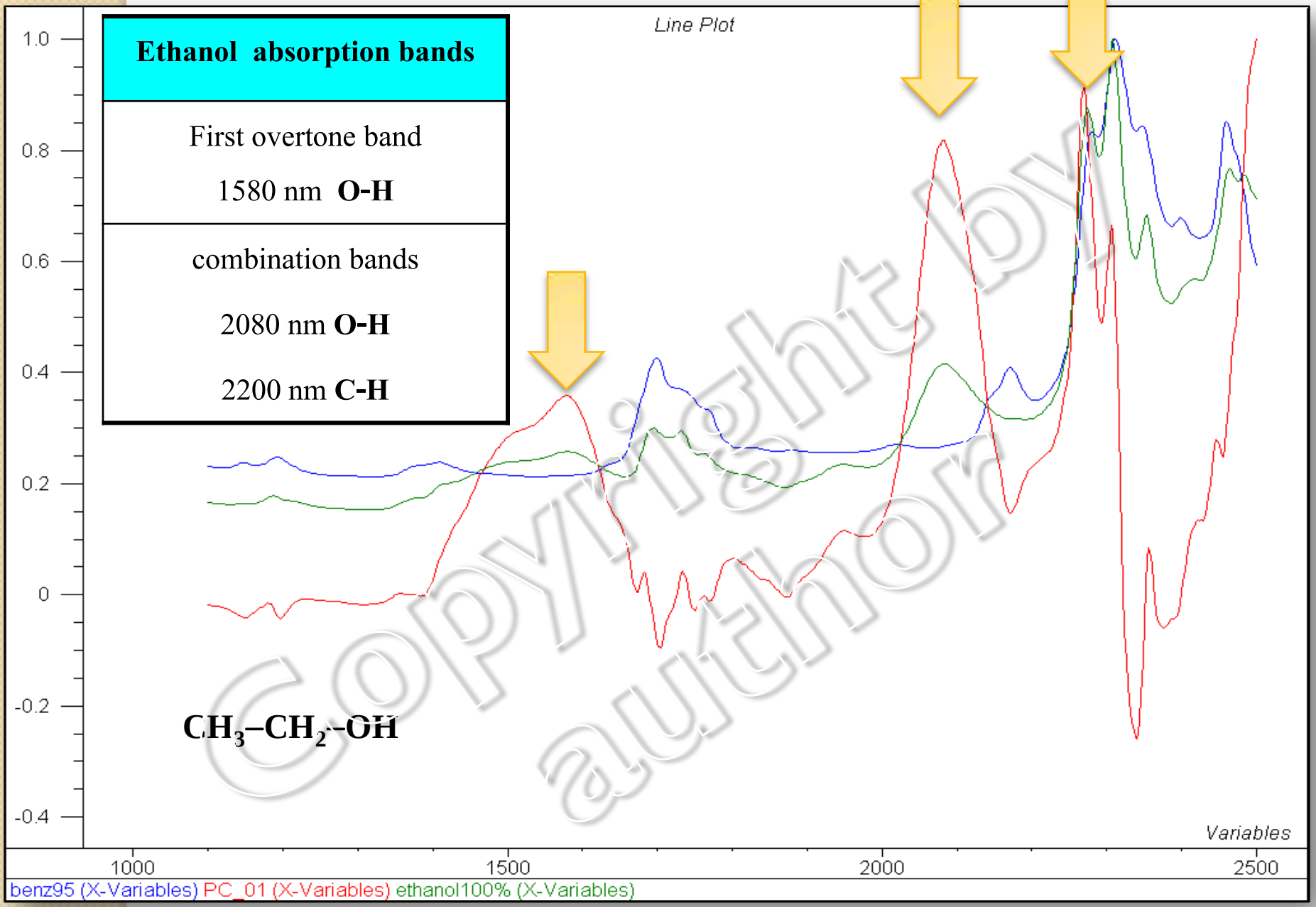


Case 2. PLS

- "Gasohol" – data
- Matrix size of 13 x 701







Case 3. Classification

"IRIS" - data

(Multivariate Data Analysis-in practice, CAMO)

Matrix size of 150 x 4

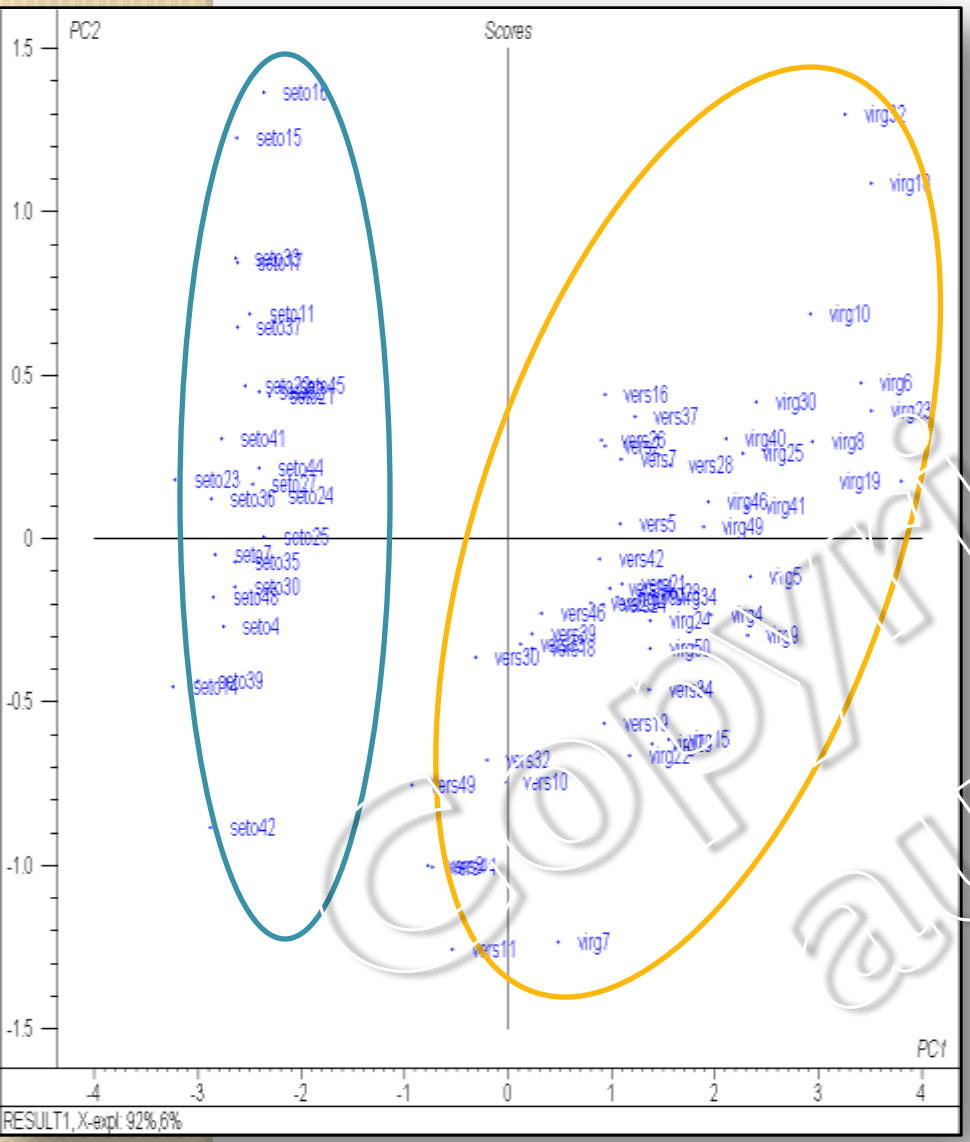
3 Groups

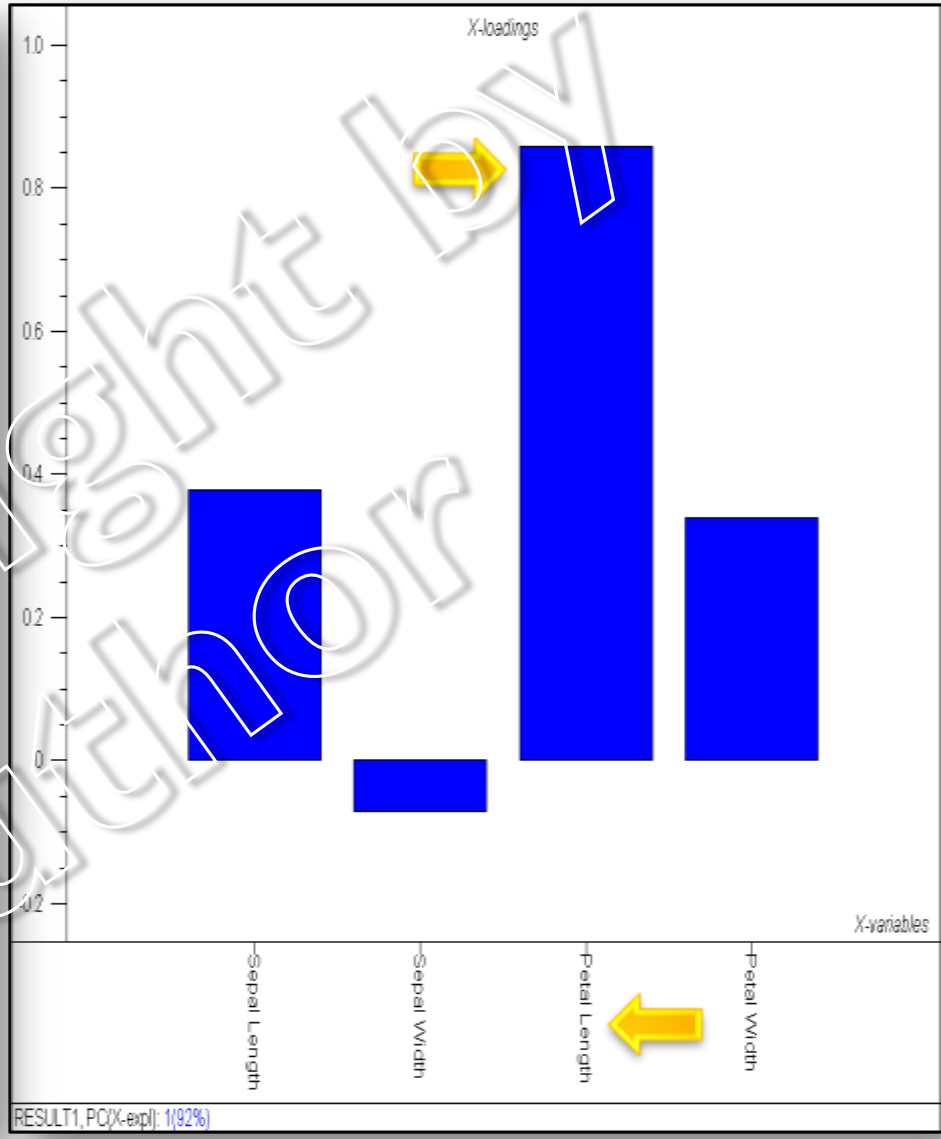
Iris Setosa

Iris Virginica

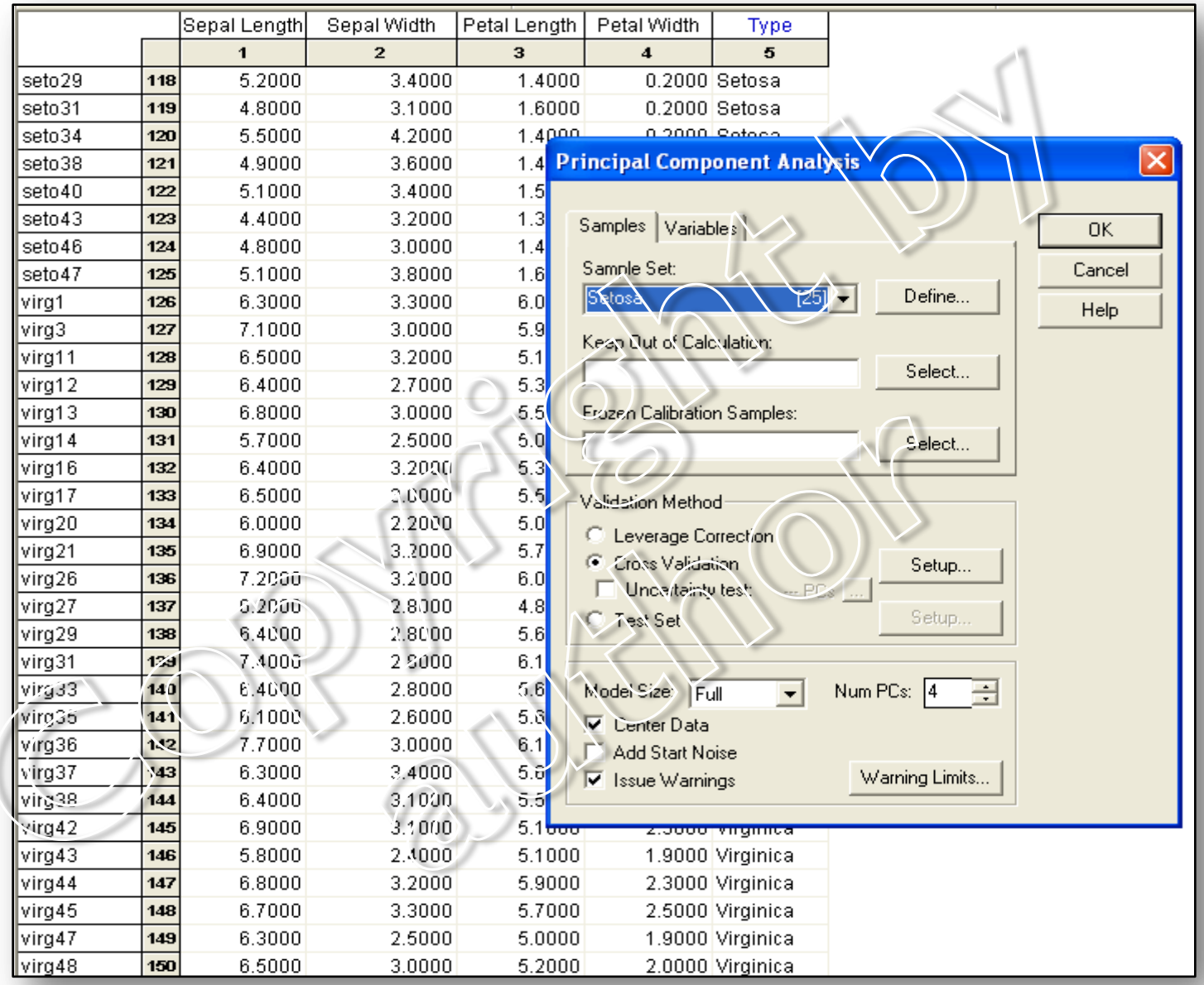
Iris Versicolor

3.1 PCA



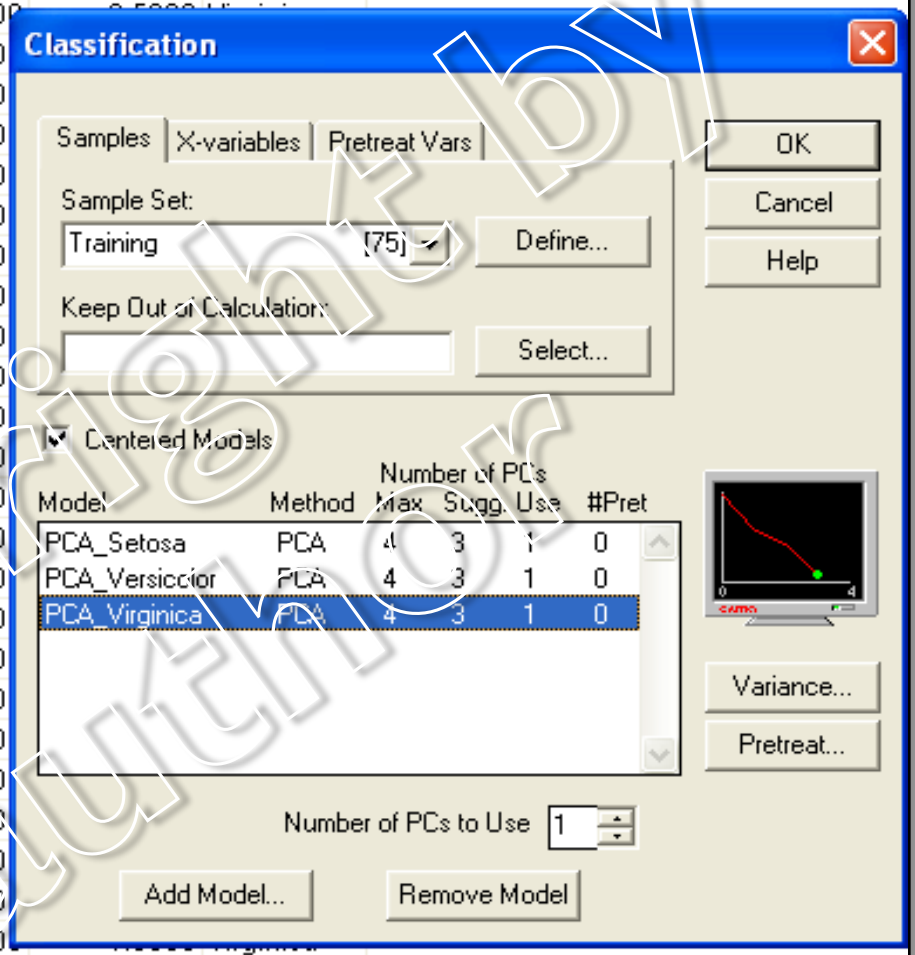


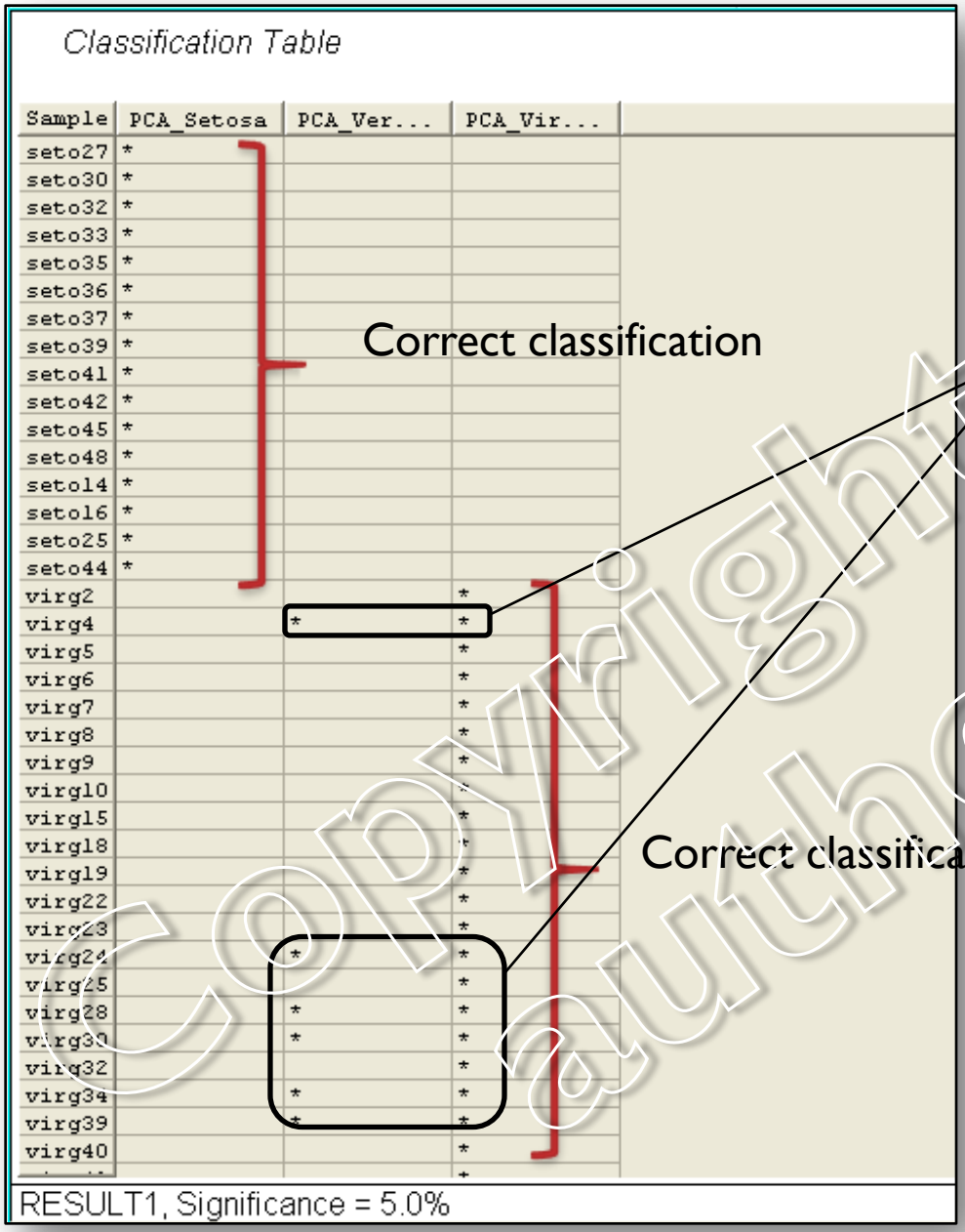
3.2 SIMCA

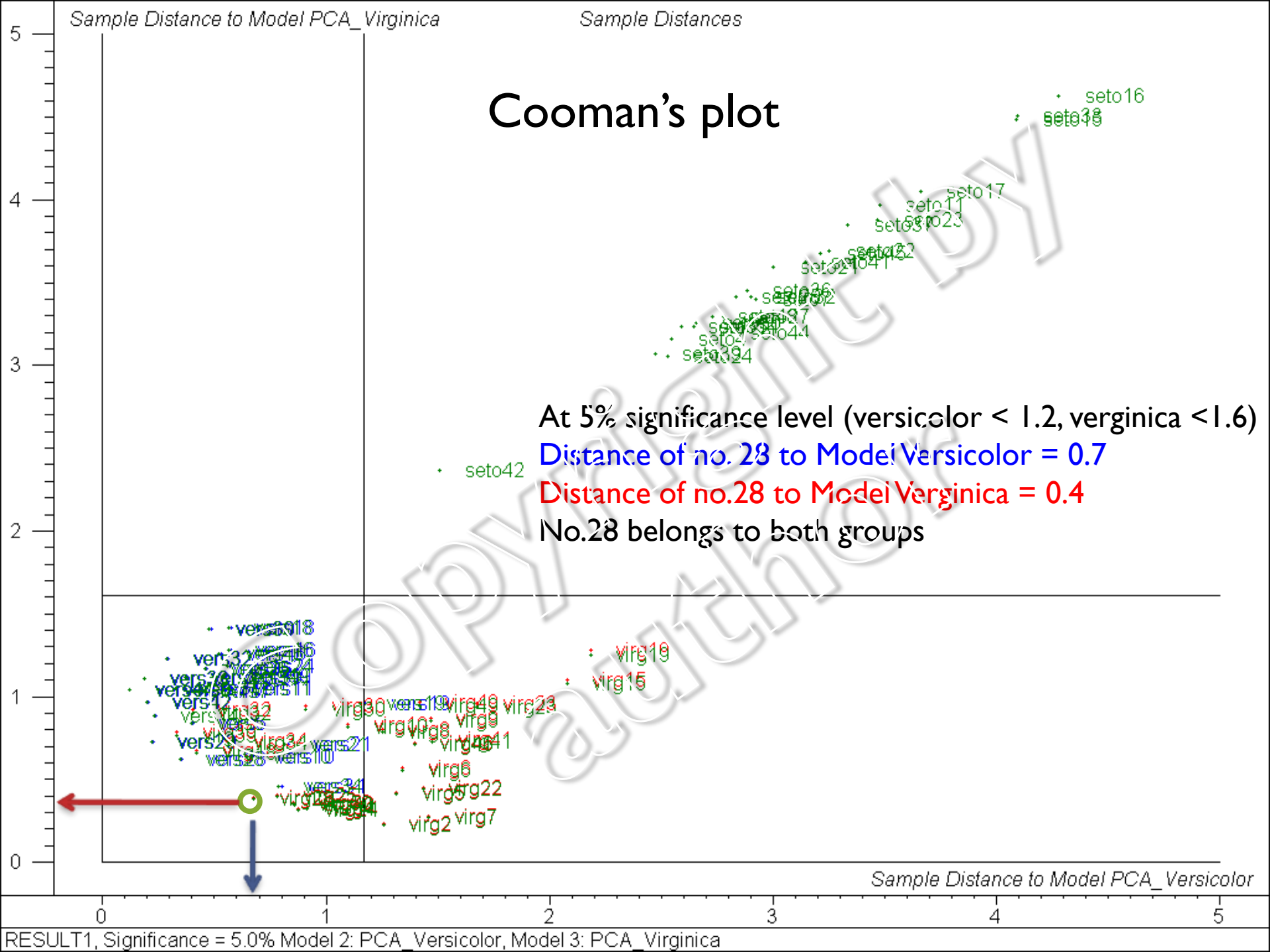


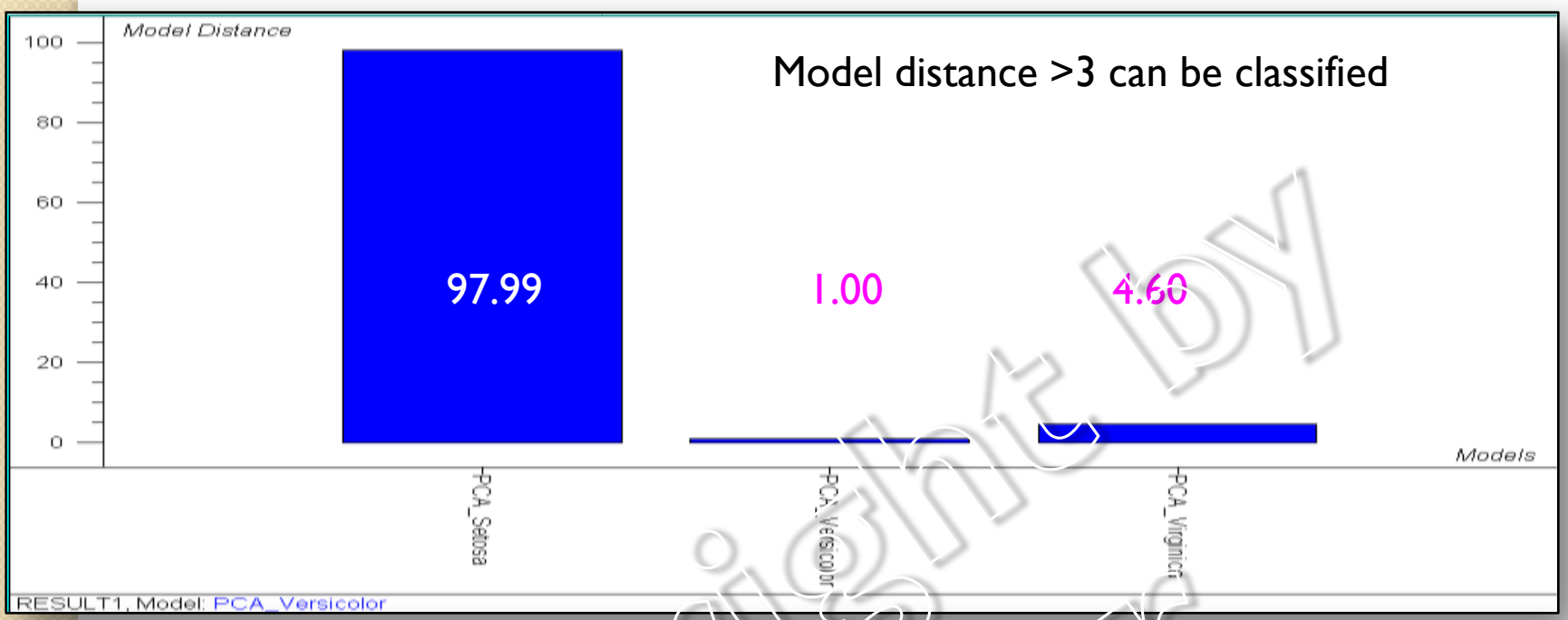
		Sepal Length	Sepal Width	Petal Length	Petal Width	Type
		1	2	3	4	5
seto29	118	5.2000	3.4000	1.4000	0.2000	Setosa
seto31	119	4.8000	3.1000	1.6000	0.2000	Setosa
seto34	120	5.5000	4.2000	1.4		
seto38	121	4.9000	3.6000	1.4		
seto40	122	5.1000	3.4000	1.5		
seto43	123	4.4000	3.2000	1.3		
seto46	124	4.8000	3.0000	1.4		
seto47	125	5.1000	3.8000	1.6		
virg1	126	6.3000	3.3000	6.0		
virg3	127	7.1000	3.0000	5.9		
virg11	128	6.5000	3.2000	5.1		
virg12	129	6.4000	2.7000	5.3		
virg13	130	6.8000	3.0000	5.5		
virg14	131	5.7000	2.5000	5.0		
virg16	132	6.4000	3.2000	5.3		
virg17	133	6.5000	3.0000	5.5		
virg20	134	6.0000	2.2000	5.0		
virg21	135	6.9000	3.2000	5.7		
virg26	136	7.2000	3.2000	6.0		
virg27	137	6.2000	2.8000	4.8		
virg29	138	6.4000	2.8000	5.6		
virg31	139	7.4000	2.8000	6.1		
virg33	140	6.4000	2.8000	5.6		
virg35	141	6.1000	2.6000	5.6		
virg36	142	7.7000	3.0000	6.1		
virg37	143	6.3000	3.4000	5.6		
virg38	144	6.4000	3.1000	5.5		
virg42	145	6.9000	3.1000	5.1		
virg43	146	5.8000	2.7000	5.1000	1.9000	Virginica
virg44	147	6.8000	3.2000	5.9000	2.3000	Virginica
virg45	148	6.7000	3.3000	5.7000	2.5000	Virginica
virg47	149	6.3000	2.5000	5.0000	1.9000	Virginica
virg48	150	6.5000	3.0000	5.2000	2.0000	Virginica

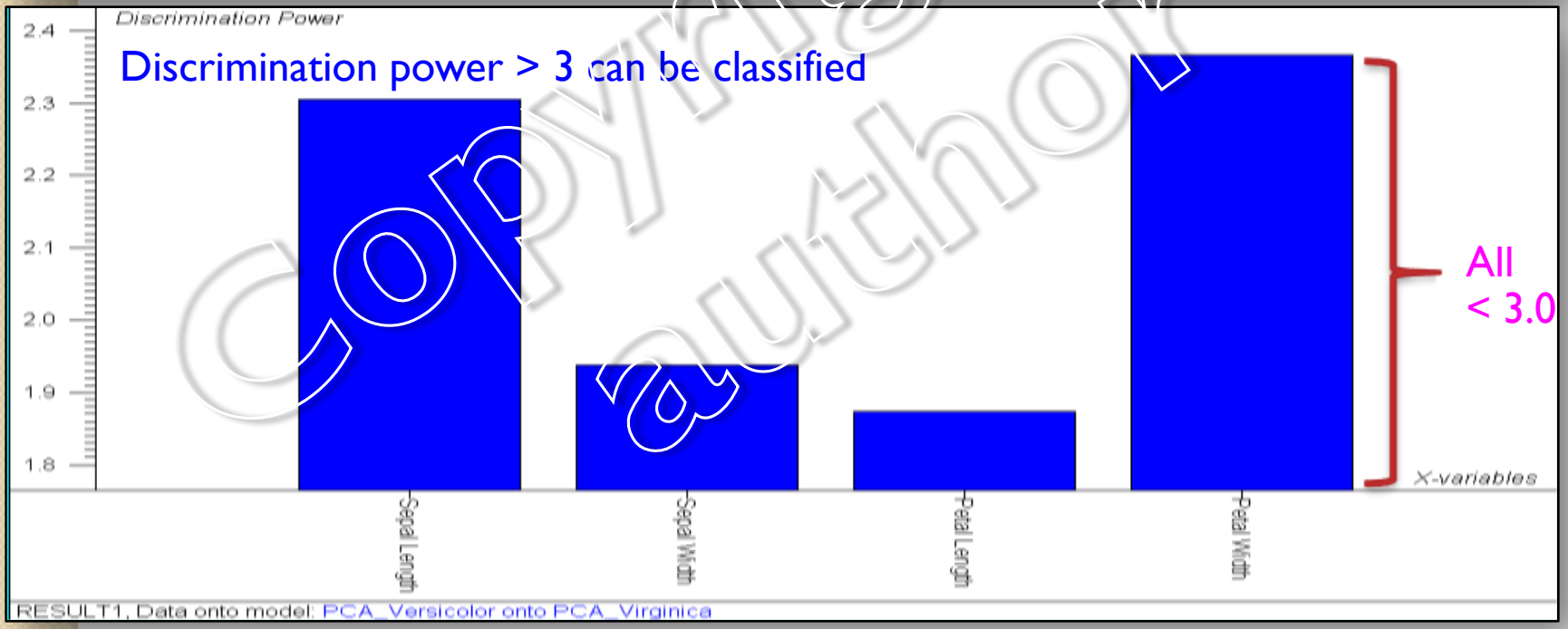
		Sepal Length	Sepal Width	Petal Length	Petal Width	Type
		1	2	3	4	5
seto43	123	4.4000	3.2000	1.3000	0.2000	Setosa
seto46	124	4.8000	3.0000	1.4000	0.3000	Setosa
seto47	125	5.1000	3.8000	1.6000	0.2000	Setosa
virg1	126	6.3000	3.3000	6.0000		
virg3	127	7.1000	3.0000	5.900		
virg11	128	6.5000	3.2000	5.100		
virg12	129	6.4000	2.7000	5.300		
virg13	130	6.8000	3.0000	5.500		
virg14	131	5.7000	2.5000	5.000		
virg16	132	6.4000	3.2000	5.300		
virg17	133	6.5000	3.0000	5.500		
virg20	134	6.0000	2.2000	5.000		
virg21	135	6.9000	3.2000	5.700		
virg26	136	7.2000	3.2000	6.000		
virg27	137	6.2000	2.8000	4.800		
virg29	138	6.4000	2.8000	5.600		
virg31	139	7.4000	2.8000	6.100		
virg33	140	6.4000	2.8000	5.600		
virg35	141	6.1000	2.6000	5.600		
virg36	142	7.7000	3.0000	6.100		
virg37	143	6.3000	3.4000	5.600		
virg38	144	6.4000	3.1000	5.500		
virg42	145	6.9000	3.1000	5.100		
virg43	146	5.8000	2.4000	5.100		
virg44	147	6.8000	3.2000	5.900		
virg45	148	6.7000	3.3000	5.700		
virg47	149	6.3000	2.5000	5.000		
virg48	150	6.5000	3.0000	5.2000	2.0000	Virginica











Thank you for your attention