

The data set (and description) can be downloaded here:

<http://stat.ethz.ch/Teaching/Datasets/crabs.dat>

**Description:**

TITLE : crabs  
KEYWORDS (statist) : discriminant analysis  
APPLICATION AREA : biology, zoology, environment

SHORT DESCRIPTION :  
Leptograpsus crabs  
Data from Campbell & Mahon (1974) on the  
morphology of  
rock crabs of genus Leptograpsus. There are 50  
specimens  
of each sex of each of two colour forms.  
Variables are:  
- colour form (B = blue form, O = orange form);  
- sex (M = male, F = female);  
- index within each group of 50;  
- frontal lip of carapace, in mm;  
- rear width of carapace, in mm;  
- length along the midline of carapace, in mm;  
- maximum width of carapace, in mm;  
- body depth, in mm.

DIM. (VAR./OBS.) : 5 / 200

/ LITERATURE : /

Ripley (1996): Pattern Recognition and Neural  
Networks.

**Descriptive statistics:**

Dataset= crabF\_BvsO : n= 100 , d= 5

Class1: n= 50

**Covariance matrix:**

	[,1]	[,2]	[,3]	[,4]	[,5]
[1,]	6.9054	6.2789	15.4733	17.7981	7.1029
[2,]	6.2789	5.9473	14.2532	16.3893	6.5553
[3,]	15.4733	14.2532	35.0422	40.2104	16.1379
[4,]	17.7981	16.3893	40.2104	46.2908	18.5290
[5,]	7.1029	6.5553	16.1379	18.5290	7.5761

**Correlation matrix:**

	[,1]	[,2]	[,3]	[,4]	[,5]
[1,]	1.0000	0.9798	0.9947	0.9955	0.9820
[2,]	0.9798	1.0000	0.9873	0.9878	0.9766
[3,]	0.9947	0.9873	1.0000	0.9984	0.9904
[4,]	0.9955	0.9878	0.9984	1.0000	0.9894
[5,]	0.9820	0.9766	0.9904	0.9894	1.0000

Median: 13.1586 12.0492 27.8601 32.293 11.5932  
 Mean: 13.27 12.138 28.102 32.624 11.816  
 MCD-estimated:  
 MDC-0.975-Mean: 12.7163 11.586 26.7977 31.1256 11.2023  
 MDC-0.750-Mean: 12.7163 11.586 26.7977 31.1256 11.2023  
 MDC-0.500-Mean: 12.6488 11.4951 26.6415 30.9098 11.1268

Class2: n= 50

Covariance matrix:

	[,1]	[,2]	[,3]	[,4]	[,5]
[1,]	8.8447	6.7255	17.1719	19.2543	8.0120
[2,]	6.7255	5.5150	13.3971	15.0458	6.2117
[3,]	17.1719	13.3971	34.0725	38.0765	15.9082
[4,]	19.2543	15.0458	38.0765	42.8007	17.7631
[5,]	8.0120	6.2117	15.9082	17.7631	7.5769

Correlation matrix:

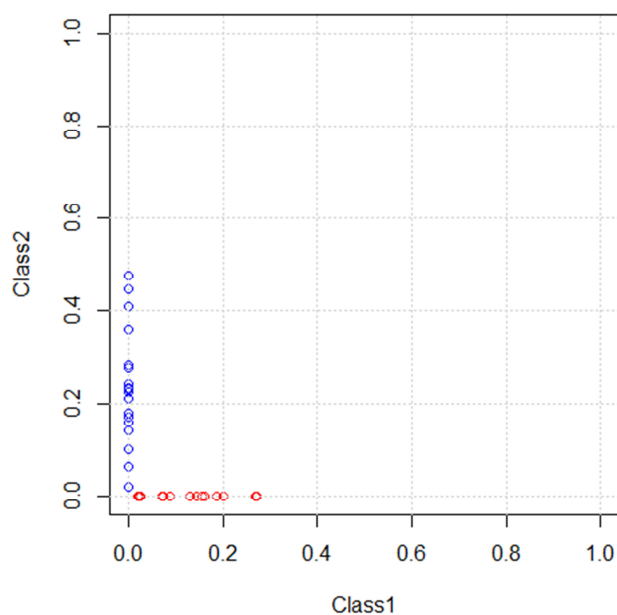
	[,1]	[,2]	[,3]	[,4]	[,5]
[1,]	1.0000	0.9630	0.9892	0.9896	0.9787
[2,]	0.9630	1.0000	0.9773	0.9793	0.9609
[3,]	0.9892	0.9773	1.0000	0.9971	0.9901
[4,]	0.9896	0.9793	0.9971	1.0000	0.9864
[5,]	0.9787	0.9609	0.9901	0.9864	1.0000

Median: 17.9134 14.8869 34.8019 39.4915 15.703  
 Mean: 17.594 14.836 34.618 39.036 15.632  
 MCD-estimated:  
 MDC-0.975-Mean: 17.6872 14.8487 34.7333 39.141 15.6795  
 MDC-0.750-Mean: 17.6872 14.8487 34.7333 39.141 15.6795  
 MDC-0.500-Mean: 17.6872 14.8487 34.7333 39.141 15.6795

Measures:

Mah.Dist: 5.3027  
 Mah.Dist-MCD-0.975: 4.4312  
 Mah.Dist-MCD-0.750: 4.6223  
 Mah.Dist-MCD-0.500: 4.4312

DD-Plot (zonoid): crabF\_BvsO



DD-Plot (random Tukey): crabF\_BvsO

