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

Description:

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1. Title of Database: Wine recognition data
Updated Sept 21, 1998 by C.Blake : Added attribute information

2. Sources:
   (a) Forina, M. et al, PARVUS - An Extendible Package for Data
       Exploration, Classification and Correlation. Institute of Pharmaceutical
       and Food Analysis and Technologies, Via Brigata Salerno,
       16147 Genoa, Italy.

   (b) Stefan Aeberhard, email: stefan@coral.cs.jcu.edu.au
   (c) July 1991
3. Past Usage:

   (1)
   S. Aeberhard, D. Coomans and O. de Vel,
   Comparison of Classifiers in High Dimensional Settings,
   Tech. Rep. no. 92-02, (1992), Dept. of Computer Science and Dept. of
   Mathematics and Statistics, James Cook University of North Queensland.
   (Also submitted to Technometrics).

   The data was used with many others for comparing various
   classifiers. The classes are separable, though only RDA
   has achieved 100% correct classification.
   (RDA : 100%, QDA 99.4%, LDA 98.9%, 1NN 96.1% (z-transformed data))
   (All results using the leave-one-out technique)

   In a classification context, this is a well posed problem
   with "well behaved" class structures. A good data set
   for first testing of a new classifier, but not very
   challenging.
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(2)

S. Aeberhard, D. Coomans and O. de Vel,
"THE CLASSIFICATION PERFORMANCE OF RDA"
Tech. Rep. no. 92-01, (1992), Dept. of Computer Science and Dept. of
Mathematics and Statistics, James Cook University of North Queensland.
(Also submitted to Journal of Chemometrics).

Here, the data was used to illustrate the superior performance of
the use of a new appreciation function with RDA.

4. Relevant Information:

   -- These data are the results of a chemical analysis of
      wines grown in the same region in Italy but derived from three
      different cultivars.
      The analysis determined the quantities of 13 constituents
      found in each of the three types of wines.

   -- I think that the initial data set had around 30 variables, but
      for some reason I only have the 13 dimensional version.
      I had a list of what the 30 or so variables were, but a.)
      I lost it, and b.), I would not know which 13 variables
      are included in the set.

   -- The attributes are (dontated by Riccardo Leardi, riclea@anchem.unige.it)
   1) Alcohol
   2) Malic acid
   3) Ash
   4) Alcalinity of ash
   5) Magnesium
   6) Total phenols
   7) Flavanoids
   8) Nonflavanoid phenols
   9) Proanthocyanins
   10)Color intensity
   11)Hue
   12)OD280/OD315 of diluted wines
   13)Proline

5. Number of Instances

class 1 59
class 2 71
class 3 48

6. Number of Attributes

13

7. For Each Attribute:

All attributes are continuous

No statistics available, but suggest to standardise
variables for certain uses (e.g. for us with classifiers
which are NOT scale invariant)

NOTE: 1st attribute is class identifier (1-3)

8. Missing Attribute Values:

None

9. Class Distribution: number of instances per class

class 1 59
class 2 71
class 3 48

Descriptive statistics:

Dataset= wine_1vs3 : n= 107 , d= 13

Class1: n= 59

```
Covariance matrix:
          [,1]      [,2]      [,3]      [,4]      [,5]      [,6]      [,7]      [,8]      [,9]     [,10]     [,11]     [,12]       [,13]
 [1,]   0.2136   -0.0129  -0.0156   -0.3746    0.7732   0.0659   0.0762    0.0005   0.0586    0.2337   0.0043    0.0115     36.9195
 [2,]  -0.0129    0.4741   0.0041    0.1053    0.5734  -0.0195  -0.0524   -0.0043  -0.0229   -0.2197  -0.0337    0.0426    -56.8364
 [3,]  -0.0156    0.0041   0.0516    0.3178    0.9124   0.0004  -0.0064    0.0074  -0.0136   -0.0350   0.0063   -0.0066     -1.4858
 [4,]  -0.3746    0.1053   0.3178    6.4838    6.3716  -0.1925  -0.2906    0.0539  -0.1822   -0.6653   0.0276   -0.1070    -69.0615
 [5,]   0.7732    0.5734   0.9124    6.3716  110.2279   1.0934   0.5147    0.1745  -0.2555    2.4013  -0.1362    0.4523   -344.0041
 [6,]   0.0659   -0.0195   0.0004   -0.1925    1.0934   0.1149   0.1083   -0.0004   0.0522    0.2729  -0.0089    0.0064     22.1502
 [7,]   0.0762   -0.0524  -0.0064   -0.2906    0.5147   0.1083   0.1580   -0.0025   0.0899    0.3651   0.0004   -0.0126     33.4995
 [8,]   0.0005   -0.0043   0.0074    0.0539    0.1745  -0.0004  -0.0025    0.0049  -0.0042   -0.0132   0.0034   -0.0081     -0.2379
 [9,]   0.0586   -0.0229  -0.0136   -0.1822   -0.2555   0.0522   0.0899   -0.0042   0.1698    0.2168   0.0050    0.0005     12.9784
[10,]   0.2337   -0.2197  -0.0350   -0.6653    2.4013   0.2729   0.3651   -0.0132   0.2168    1.5341   0.0041   -0.0827    161.5407
[11,]   0.0043   -0.0337   0.0063    0.0276   -0.1362  -0.0089   0.0004    0.0034   0.0050    0.0041   0.0136   -0.0129      9.1180
[12,]   0.0115    0.0426  -0.0066   -0.1070    0.4523   0.0064  -0.0126   -0.0081   0.0005   -0.0827  -0.0129    0.1275    -27.5401
[13,]  36.9195  -56.8364  -1.4858  -69.0615 -344.0041  22.1502  33.4995   -0.2379  12.9784  161.5407   9.1180  -27.5401  49071.4500

Correlation matrix:
          [,1]      [,2]      [,3]      [,4]      [,5]      [,6]      [,7]      [,8]      [,9]     [,10]     [,11]     [,12]    [,13]
 [1,]   1.0000   -0.0405  -0.1486  -0.3184    0.1594   0.4207   0.4149    0.0157   0.3076    0.4083   0.0800    0.0698   0.3606
 [2,]  -0.0405    1.0000   0.0262   0.0600    0.0793  -0.0835  -0.1913   -0.0894  -0.0808   -0.2576  -0.4200    0.1732  -0.3726
 [3,]  -0.1486    0.0262   1.0000   0.5493    0.3825   0.0048  -0.0705    0.4659  -0.1455   -0.1242   0.2392   -0.0816  -0.0295
 [4,]  -0.3184    0.0600   0.5493   1.0000    0.2383  -0.2230  -0.2871    0.3023  -0.1736   -0.2110   0.0930   -0.1177  -0.1224
 [5,]   0.1594    0.0793   0.3825   0.2383    1.0000   0.3072   0.1233    0.2372  -0.0590    0.1847  -0.1114    0.1207  -0.1479
 [6,]   0.4207   -0.0835   0.0048  -0.2230    0.3072   1.0000   0.8038   -0.0170   0.3736    0.6501  -0.2243    0.0532   0.2950
 [7,]   0.4149   -0.1913  -0.0705  -0.2871    0.1233   0.8038   1.0000   -0.0895   0.5486    0.7416   0.0079   -0.0885   0.3804
 [8,]   0.0157   -0.0894   0.4659   0.3023    0.2372  -0.0170  -0.0895    1.0000  -0.1445   -0.1525   0.4118   -0.3235  -0.0153
 [9,]   0.3076   -0.0808  -0.1455  -0.1736   -0.0590   0.3736   0.5486   -0.1445   1.0000    0.4247   0.1039    0.0031   0.1422
[10,]   0.4083   -0.2576  -0.1242  -0.2110    0.1847   0.6501   0.7416   -0.1525   0.4247    1.0000   0.0282   -0.1869   0.5888
[11,]   0.0800   -0.4200   0.2392   0.0930   -0.1114  -0.2243   0.0079    0.4118   0.1039    0.0282   1.0000   -0.3107   0.3534
[12,]   0.0698    0.1732  -0.0816  -0.1177    0.1207   0.0532  -0.0885   -0.3235   0.0031   -0.1869  -0.3107    1.0000  -0.3482
[13,]   0.3606   -0.3726  -0.0295  -0.1224   -0.1479   0.2950   0.3804   -0.0153   0.1422    0.5888   0.3534   -0.3482   1.0000

Median:           13.7453 2.0431 2.4774 17.0148 105.3519 2.8009 2.9508 0.2665 1.77    5.1854 1.0248 3.1632 1092.672

Mean:             13.7447 2.0107 2.4556 17.0373 106.339  2.8402 2.9824 0.29    1.8993 5.5283 1.062  3.1578 1115.712
MCD-estimated:
MDC-0.975-Mean:   13.7227 1.738  2.4541 17.0805 106.3171 2.8412 2.9763 0.2861 1.8193 5.5912 1.0661 3.1676 1148.781
MDC-0.750-Mean:   13.7428 1.7492 2.439  16.9744 105.5385 2.8221 2.9269 0.2821 1.8418 5.3626 1.0538 3.1821 1123.718
MDC-0.500-Mean:   13.7372 1.7428 2.4607 17.1977 106.4884 2.8447 2.9588 0.2905 1.8221 5.5102 1.0614 3.157  1129.186
```

Class2: n= 48

Covariance matrix:
```
          [,1]     [,2]     [,3]      [,4]      [,5]     [,6]     [,7]     [,8]     [,9]    [,10]    [,11]    [,12]       [,13]
 [1,]   0.2812   0.0637   0.0240    0.2514   -0.4859   0.0398   0.0118   0.0025   0.0816   0.4293  -0.0021   0.0191     -5.4347
 [2,]   0.0637   1.1835   0.0036    0.2089   -2.0731  -0.0624  -0.0899   0.0193  -0.0994  -0.4078   0.0099   0.0021      0.3642
 [3,]   0.0240   0.0036   0.0341    0.3163    0.4250   0.0310   0.0150  -0.0005   0.0146   0.0534   0.0038   0.0113     -3.1312
 [4,]   0.2514   0.2089   0.3163    5.0993    3.9202   0.2938   0.1799  -0.0048   0.2432   0.8382   0.0071   0.0256    -25.6472
 [5,]  -0.4859  -2.0731   0.4250    3.9202  118.6024  -0.1541   1.8180  -0.6837   0.6836   2.6223   0.0057  -0.6609    238.0120
 [6,]   0.0398  -0.0624   0.0310    0.2938   -0.1541   0.1274   0.0250   0.0145   0.0905   0.2771  -0.0011   0.0195      1.7637
 [7,]   0.0118  -0.0899   0.0150    0.1799    1.8180   0.0250   0.0861  -0.0231   0.0490   0.2489  -0.0098  -0.0343     -8.3254
 [8,]   0.0025   0.0193  -0.0005   -0.0048   -0.6837   0.0145  -0.0231   0.0154   0.0087   0.0075   0.0022   0.0104      2.8891
 [9,]   0.0816  -0.0994   0.0146    0.2432    0.6836   0.0905   0.0490   0.0087   0.1671   0.6471  -0.0197  -0.0143      9.1982
[10,]   0.4293  -0.4078   0.0534    0.8382    2.6223   0.2771   0.2489   0.0075   0.6471   5.3405  -0.1504  -0.0648     32.0230
[11,]  -0.0021   0.0099   0.0038    0.0071    0.0057  -0.0011  -0.0098   0.0022  -0.0197  -0.1504   0.0131   0.0113      0.0311
[12,]   0.0191   0.0021   0.0113    0.0256   -0.6609   0.0195  -0.0343   0.0104  -0.0143  -0.0648   0.0113   0.0740      6.1259
[13,]  -5.4347   0.3642  -3.1312  -25.6472  238.0120   1.7637  -8.3254   2.8891   9.1982  32.0230   0.0311   6.1259  13247.3293
```

Correlation matrix:
```
          [,1]     [,2]     [,3]      [,4]     [,5]     [,6]     [,7]     [,8]     [,9]    [,10]    [,11]    [,12]    [,13]
 [1,]   1.0000   0.1105   0.2451    0.2099  -0.0841   0.2104   0.0761   0.0382   0.3766   0.3504  -0.0341   0.1322  -0.0891
 [2,]   0.1105   1.0000   0.0181    0.0850  -0.1750  -0.1607  -0.2816   0.1428  -0.2234  -0.1622   0.0797   0.0072   0.0029
 [3,]   0.2451   0.0181   1.0000    0.7585   0.2113   0.4704   0.2771  -0.0204   0.1938   0.1252   0.1805   0.2254  -0.1473
 [4,]   0.2099   0.0850   0.7585    1.0000   0.1594   0.3645   0.2714  -0.0171   0.2634   0.1606   0.0276   0.0417  -0.0987
 [5,]  -0.0841  -0.1750   0.2113    0.1594   1.0000  -0.0396   0.5688  -0.5057   0.1535   0.1042   0.0046  -0.2230   0.1899
 [6,]   0.2104  -0.1607   0.4704    0.3645  -0.0396   1.0000   0.2389   0.3263   0.6200   0.3359  -0.0261   0.2004   0.0429
 [7,]   0.0761  -0.2816   0.2771    0.2714   0.5688   0.2389   1.0000  -0.6345   0.4080   0.3669  -0.2931  -0.4297  -0.2464
 [8,]   0.0382   0.1428  -0.0204   -0.0171  -0.5057   0.3263  -0.6345   1.0000   0.1718   0.0263   0.1531   0.3066   0.2022
 [9,]   0.3766  -0.2234   0.1938    0.2634   0.1535   0.6200   0.4080   0.1718   1.0000   0.6849  -0.4218  -0.1286   0.1955
[10,]   0.3504  -0.1622   0.1252    0.1606   0.1042   0.3359   0.3669   0.0263   0.6849   1.0000  -0.5686  -0.1030   0.1204
[11,]  -0.0341   0.0797   0.1805    0.0276   0.0046  -0.0261  -0.2931   0.1531  -0.4218  -0.5686   1.0000   0.3643   0.0024
[12,]   0.1322   0.0072   0.2254    0.0417  -0.2230   0.2004  -0.4297   0.3066  -0.1286  -0.1030   0.3643   1.0000   0.1956
[13,]  -0.0891   0.0029  -0.1473   -0.0987   0.1899   0.0429  -0.2464   0.2022   0.1955   0.1204   0.0024   0.1956   1.0000
```

```
Median:            13.187   3.0508 2.4547 21.4506   97.5229 1.7777 0.8029 0.448   1.2204 7.7863 0.6726 1.7161 625.3559


Mean:              13.1538 3.3338 2.4371 21.4167   99.3125 1.6788 0.7815 0.4475 1.1535 7.3962 0.6827 1.6835 629.8958
MCD-estimated:
MDC-0.975-Mean:    13.2191 3.603  2.4088 21.1515   97.1212 1.6282 0.6506 0.4824 1.1158 7.4045 0.6864 1.753  648.3333
MDC-0.750-Mean:    13.2    3.2744 2.4332 21.25    100.8529 1.6526 0.8224 0.4365 1.1447 7.5238 0.6759 1.6376 621.9118
MDC-0.500-Mean:    13.1945 3.3903 2.4242 21.303   100.8788 1.6648 0.8345 0.4358 1.1585 7.6561 0.6748 1.5973 619.2424


Measures:
Mah.Dist:                        10.78
Mah.Dist-MCD-0.975:              10.2546
Mah.Dist-MCD-0.750:              10.9787
Mah.Dist-MCD-0.500:              11.3133
```
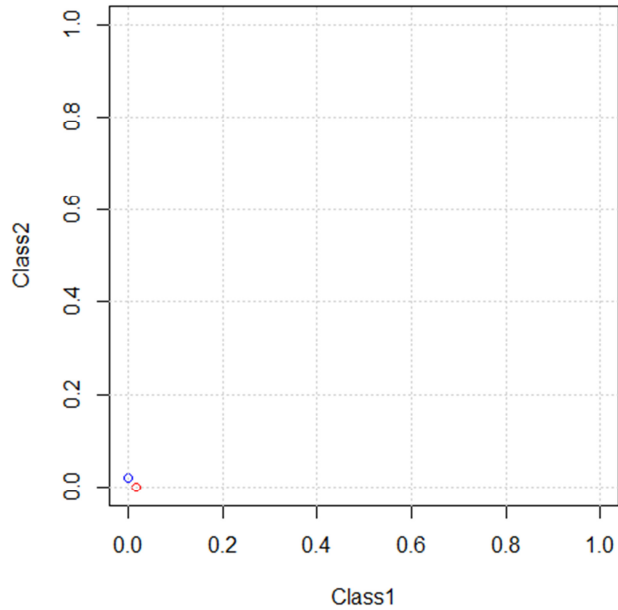

DD-Plot (zonoid): wine_1vs3   DD-Plot (random Tukey): wine_1vs3