

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

<http://lib.stat.cmu.edu/datasets/cloud>

Description:

These data are those collected in a cloud-seeding experiment in Tasmania between mid-1964 and January 1971. Their analysis, using regression techniques and permutation tests, is discussed in:

Miller, A.J., Shaw, D.E., Veitch, L.G. & Smith, E.J. (1979).
`Analyzing the result of a cloud-seeding experiment in Tasmania`,
Communications in Statistics - Theory & Methods, vol.A8(10),
1017-1047.

The rainfalls are period rainfalls in inches. TE and TW are the east and west target areas respectively, while NC, SC and NWC are the corresponding rainfalls in the north, south and north-west control areas respectively.

S = seeded, U = unseeded

PERIOD	SEEDED	SEASON	TE	TW	NC	SC	NWC
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Descriptive statistics:

Dataset= cloud : n= 108 , d= 7

Class1: n= 54

Covariance matrix:

	[,1]	[,2]	[,3]	[,4]	[,5]	[,6]	[,7]
[1,]	3424.5185	-1.7275	2.1427	7.7443	-3.3022	6.6745	0.9264
[2,]	-1.7275	1.3836	-0.0327	-0.1096	0.0818	-0.0302	0.1455
[3,]	2.1427	-0.0327	0.9828	1.1891	0.8664	0.7452	1.1012
[4,]	7.7443	-0.1096	1.1891	2.4658	1.1670	1.2356	2.2527
[5,]	-3.3022	0.0818	0.8664	1.1670	1.4266	0.5926	1.6126
[6,]	6.6745	-0.0302	0.7452	1.2356	0.5926	0.7859	1.0262
[7,]	0.9264	0.1455	1.1012	2.2527	1.6126	1.0262	2.6346

Correlation matrix:

	[,1]	[,2]	[,3]	[,4]	[,5]	[,6]	[,7]
[1,]	1.0000	-0.0251	0.0369	0.0843	-0.0472	0.1287	0.0098
[2,]	-0.0251	1.0000	-0.0280	-0.0594	0.0583	-0.0290	0.0762
[3,]	0.0369	-0.0280	1.0000	0.7638	0.7317	0.8479	0.6843
[4,]	0.0843	-0.0594	0.7638	1.0000	0.6222	0.8876	0.8838
[5,]	-0.0472	0.0583	0.7317	0.6222	1.0000	0.5597	0.8318
[6,]	0.1287	-0.0290	0.8479	0.8876	0.5597	1.0000	0.7132
[7,]	0.0098	0.0762	0.6843	0.8838	0.8318	0.7132	1.0000

Median: 106.0077 2.243 0.9755 1.6751 1.3588 0.9837 1.7152

Mean: 100.4815 2.4444 1.1506 2.0013 1.3259 1.1543 2.025

MCD-estimated:

MDC-0.975-Mean: 95.1818 2.303 0.7521 1.5261 0.9348 0.7427 1.6064

MDC-0.750-Mean: 94.5 2.375 0.7191 1.4816 0.9816 0.7034 1.6281

MDC-0.500-Mean: 95.1818 2.303 0.7521 1.5261 0.9348 0.7427 1.6064

Class2: n= 54

Covariance matrix:

	[,1]	[,2]	[,3]	[,4]	[,5]	[,6]	[,7]
[1,]	3432.9434	-1.8113	18.4527	25.5788	15.2872	11.7717	16.0980
[2,]	-1.8113	1.3836	0.1502	0.0746	0.5652	0.0632	0.6668
[3,]	18.4527	0.1502	1.3460	1.3811	1.6980	0.9102	1.5031
[4,]	25.5788	0.0746	1.3811	2.1683	1.7160	1.0020	2.0032
[5,]	15.2872	0.5652	1.6980	1.7160	2.6452	1.0344	2.3480
[6,]	11.7717	0.0632	0.9102	1.0020	1.0344	0.8150	1.0018
[7,]	16.0980	0.6668	1.5031	2.0032	2.3480	1.0018	2.6913

Correlation matrix:

	[,1]	[,2]	[,3]	[,4]	[,5]	[,6]	[,7]
[1,]	1.0000	-0.0263	0.2715	0.2965	0.1604	0.2225	0.1675
[2,]	-0.0263	1.0000	0.1100	0.0431	0.2954	0.0595	0.3456
[3,]	0.2715	0.1100	1.0000	0.8085	0.8999	0.8690	0.7898
[4,]	0.2965	0.0431	0.8085	1.0000	0.7165	0.7537	0.8292
[5,]	0.1604	0.2954	0.8999	0.7165	1.0000	0.7045	0.8800
[6,]	0.2225	0.0595	0.8690	0.7537	0.7045	1.0000	0.6764
[7,]	0.1675	0.3456	0.7898	0.8292	0.8800	0.6764	1.0000

Median: 106.592 2.2488 0.9728 1.6491 1.2246 1.0801 1.7097

Mean: 100.6667 2.4444 1.3146 2.0915 1.6869 1.25 2.3607

MCD-estimated:

MDC-0.975-Mean: 95.8947 2.3947 0.8255 1.6653 1.0587 0.93 1.7074

MDC-0.750-Mean: 102.1842 2.3158 0.8455 1.6861 0.9955 0.935 1.645

MDC-0.500-Mean: 99.3333 2.4103 0.8962 1.7531 1.1728 0.9944 1.8621

Measures:

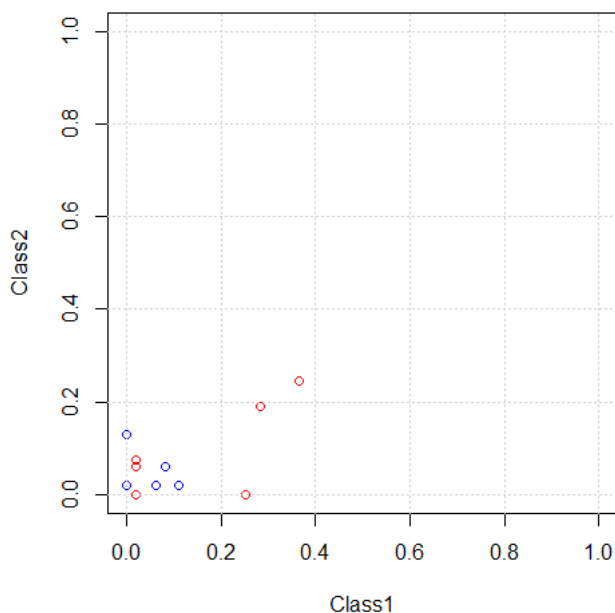
Mah.Dist: 0.3628

Mah.Dist-MCD-0.975: 0.5511

Mah.Dist-MCD-0.750: 0.5555

Mah.Dist-MCD-0.500: 0.5733

DD-Plot (zonoid): cloud



DD-Plot (random Tukey): cloud

