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# A numerical taxonomic study of the Brachylaena discolor-uniflora species complex (Compositae)

**Haines, David William**

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http://hdl.handle.net/10539/16710

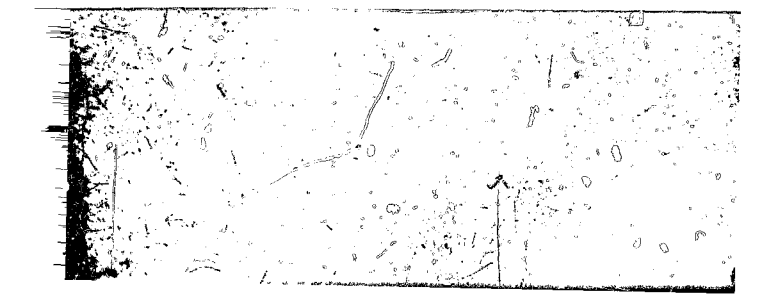
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CANONICAL DISCRIMINANT ANALYSIS

*POOLED WITHIN-CLASS CORRELATION MATRIX*

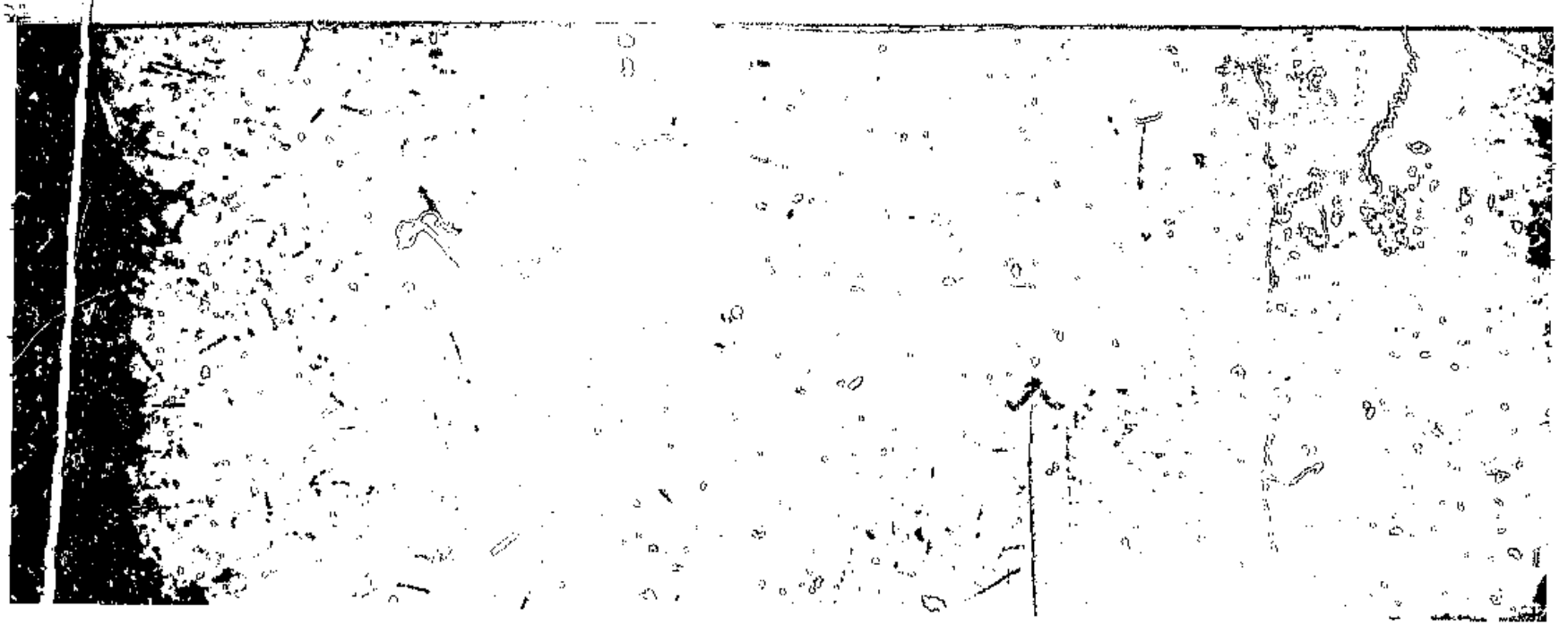
| VARIABLE | RACHLEN | INTNDLN | LNWDRL | MXLNL | MXWDL | APXAN | APXPS | BSAN | BSPS | SVINS |
|---|---|---|---|---|---|---|---|---|---|---|
| RACHLEN | 1.0000 | 0.6377 | 0.0343 | 0.3339 | 0.0755 | -0.0713 | -0.1204 | -0.0961 | -0.0798 | -0.0285 |
| INTNDLN | 0.6377 | 1.0000 | 0.0546 | 0.1601 | 0.0951 | -0.0785 | -0.1681 | -0.0036 | -0.0685 | -0.3703 |
| LNWDRL | 0.0343 | 0.0546 | 1.0000 | 0.3972 | -0.4623 | -0.4657 | 0.0524 | -0.4583 | 0.0746 | -0.3761 |
| MXLNL | 0.3339 | 0.1601 | 0.3972 | 1.0000 | 0.6090 | -0.2956 | 0.0625 | -0.0499 | 0.2029 | -0.0358 |
| MXWDL | 0.0755 | 0.0951 | -0.4623 | 0.6090 | 1.0000 | 0.1368 | 0.0178 | 0.3353 | 0.1067 | 0.3124 |
| APXAN | -0.0713 | -0.0785 | -0.4657 | -0.2956 | 0.1368 | 1.0000 | -0.4201 | 0.8230 | -0.1583 | 0.2565 |
| APXPS | -0.1204 | -0.1681 | 0.0524 | 0.0625 | 0.0178 | -0.4201 | 1.0000 | 0.1618 | 0.1737 | -0.0684 |
| BSAN | -0.0961 | -0.0036 | -0.4583 | -0.0499 | 0.3353 | 0.8230 | 0.1618 | 1.0000 | 0.5236 | 0.1090 |
| BSPS | -0.0798 | -0.0685 | 0.0746 | -0.2029 | 0.1067 | -0.1583 | 0.1737 | 0.5236 | 1.0000 | -0.0302 |
| SVINS | -0.0285 | -0.1103 | -0.3761 | -0.0358 | 0.3124 | 0.2565 | -0.0684 | 0.1090 | -0.0302 | 1.0000 |
| WSEGV | 0.0871 | 0.0077 | 0.1951 | 0.5720 | 0.3687 | -0.1303 | -0.0128 | 0.0956 | 0.2710 | 0.2096 |
| PINSV | -0.0787 | 0.0596 | 0.0204 | 0.1730 | 0.1333 | -0.0361 | 0.0684 | 0.0678 | 0.1097 | -0.1276 |
| PTLLN | 0.1703 | 0.2393 | 0.4287 | 0.5686 | 0.1955 | -0.3839 | 0.0520 | 0.1133 | 0.1693 | -0.0504 |
| INTLN | 0.1128 | 0.0745 | -0.1167 | 0.1586 | 0.2534 | 0.0819 | -0.3299 | 0.0417 | 0.0299 | 0.0823 |
| NBR | 0.1402 | 0.1133 | -0.0273 | -0.0597 | -0.0359 | 0.1726 | -0.0470 | -0.0120 | 0.0836 | 0.1284 |
| IBRL | 0.0914 | -0.0068 | 0.0607 | 0.0460 | -0.1075 | -0.0584 | 0.0976 | 0.2780 | 0.3820 | 0.0304 |
| OBRL | 0.1668 | 0.0879 | 0.1368 | 0.1017 | -0.0237 | -0.0281 | 0.0696 | 0.1513 | 0.2953 | 0.0402 |
| IBRW | 0.0395 | 0.0504 | -0.1550 | -0.0425 | 0.1021 | -0.0092 | 0.1891 | 0.1388 | 0.0248 | -0.0297 |
| OBRW | 0.1188 | 0.1906 | 0.1345 | 0.2184 | 0.0993 | -0.0678 | 0.0226 | 0.0474 | 0.1007 | -0.1218 |
| PMXL | 0.1983 | 0.0777 | -0.0123 | 0.0705 | 0.0577 | 0.2180 | 0.1470 | -0.0768 | 0.1089 | -0.0787 |
| LBRL | 0.1763 | 0.1069 | 0.1121 | 0.1664 | 0.0577 | -0.0597 | -0.1231 | 0.0495 | 0.1715 | 0.0524 |
| NFLDR | 0.1138 | 0.0907 | 0.1721 | -0.0440 | -0.1979 | 0.0015 | 0.0122 | 0.0943 | 0.1445 | -0.0359 |
| CORLLN | -0.0108 | 0.0209 | 0.1300 | 0.1672 | 0.0651 | -0.0050 | 0.0378 | -0.2038 | -0.0229 | -0.0035 |
| CORLWD | 0.0561 | 0.1336 | -0.0346 | 0.0697 | 0.1099 | -0.0366 | 0.0171 | 0.0113 | 0.0011 | 0.1318 |
| CORTWD | -0.0779 | -0.0533 | -0.0306 | -0.0180 | 0.0123 | -0.0536 | 0.0645 | -0.1112 | 0.0628 | 0.0105 |
| LCTPTA | 0.0475 | -0.0098 | 0.0439 | 0.0207 | -0.0100 | 0.0025 | 0.0329 | -0.0361 | 0.0021 | 0.0139 |
| INFW | 0.1207 | -0.0256 | 0.1051 | 0.0229 | -0.0780 | 0.0759 | 0.0306 | -0.0105 | 0.1594 | -0.1649 |
| INFL | 0.1460 | 0.0879 | 0.0939 | 0.0039 | 0.0231 | 0.0240 | -0.0469 | 0.0662 | 0.2112 | 0.0295 |
| FMXLN | -0.0017 | 0.0602 | 0.0443 | 0.0815 | 0.0536 | 0.0483 | -0.0251 | -0.0774 | -0.0141 | -0.0636 |
| AMXLN | 0.0800 | -0.0616 | -0.2017 | 0.1152 | 0.1115 | 0.0368 | 0.0468 | -0.0609 | 0.2217 | 0.1069 |
| STMKLDL | 0.1107 | 0.2529 | 0.0701 | 0.0997 | 0.1785 | -0.0142 | 0.0428 | -0.0075 | -0.0800 | 0.0839 |
| VAOPKLN | -0.0628 | -0.1962 | 0.0699 | 0.1246 | 0.1615 | 0.0144 | 0.0324 | 0.0293 | 0.0735 | -0.0064 |
| CRMKHD | 0.0419 | 0.0531 | 0.0067 | 0.0733 | 0.0610 | -0.1263 | 0.0832 | 0.1759 | 0.1426 | -0.0292 |
| CRMNHD | 0.0514 | 0.0718 | 0.0339 | 0.0980 | 0.1167 | -0.0767 | 0.1382 | 0.1251 | 0.1476 | 0.0229 |
| VANGS | 0.1157 | 0.1171 | -0.3232 | 0.0546 | 0.3347 | 0.2456 | -0.1456 | 0.2227 | 0.0705 | 0.4391 |
| VANGB | -0.1622 | -0.1082 | -0.2151 | 0.1715 | 0.3167 | 0.0240 | 0.0133 | -0.2548 | 0.2606 | 0.1969 |
| SHINL | -0.0463 | 0.0386 | 0.1799 | 0.1367 | -0.1367 | 0.1073 | 0.0861 | -0.2041 | 0.1103 | -0.3294 |
| NWNOFHD | 0.5809 | 0.3366 | -0.0282 | 0.1297 | 0.1286 | -0.1890 | -0.0415 | -0.1560 | -0.1823 | 0.0441 |
| IBLNR | 0.0385 | -0.0810 | 0.1502 | -0.0233 | -0.0035 | -0.0225 | -0.0407 | 0.0111 | 0.3561 | 0.0668 |
| OBLWR | -0.0231 | -0.1339 | -0.0875 | -0.1870 | -0.1383 | 0.0683 | 0.0189 | 0.0444 | 0.1009 | 0.2257 |
| IRVLWR | -0.0612 | -0.0587 | 0.0205 | 0.0858 | 0.0618 | 0.0520 | -0.1364 | -0.1067 | -0.0530 | 0.1008 |
| CRLLWR | -0.0259 | -0.0629 | 0.1466 | 0.0676 | -0.0652 | 0.0157 | 0.0033 | -0.2052 | -0.0335 | -0.0865 |
| CORLWR | 0.0039 | -0.0765 | 0.0338 | 0.0038 | -0.0199 | 0.0992 | -0.0167 | -0.1605 | -0.0070 | 0.0204 |
| CORLMWR | -0.0864 | -0.0412 | 0.0806 | -0.0301 | -0.0945 | 0.0607 | -0.0535 | -0.1517 | -0.0376 | -0.0092 |
| STLLWR | 0.0005 | -0.1939 | 0.0877 | -0.0933 | -0.1371 | 0.0418 | -0.0166 | 0.0718 | 0.1827 | -0.0425 |
| TRFLPLR | -0.0452 | -0.0339 | -0.0400 | 0.0565 | 0.1153 | 0.0129 | -0.1059 | -0.1289 | -0.1781 | -0.0924 |
| INFLWR | -0.0151 | 0.0709 | -0.0702 | 0.0285 | 0.0679 | -0.0846 | -0.1039 | -0.0540 | 0.0857 | 0.2221 |
| LRRFWR | -0.0499 | -0.0008 | 0.0960 | -0.0142 | 0.0883 | 0.0607 | -0.0318 | 0.0783 | 0.1594 | -0.0690 |
| ALFMLR | 0.1057 | 0.0134 | -0.0396 | 0.0624 | 0.0665 | -0.0430 | 0.0689 | 0.1453 | 0.1511 | 0.1083 |
| LCPFCLR | -0.0280 | -0.0083 | -0.0592 | -0.0956 | -0.0430 | 0.0484 | 0.0112 | -0.0069 | 0.0423 | 0.0136 |

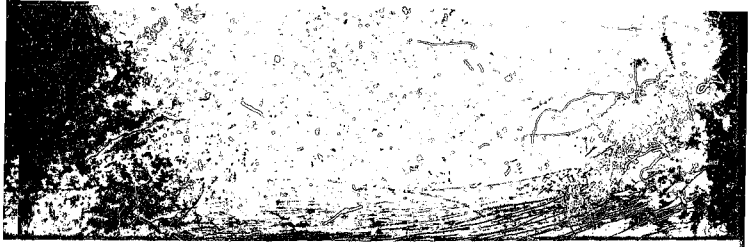


CANONICAL DISCRIMINANT ANALYSIS

POOLED WITHIN-CLASS CORRELATION MATRIX

| VARIABLE | NSECV | PINSV | PTLLN | INTLN | NBR | IBRL | OBRL | IBRW | OCRW | PMXL |
|---|---|---|---|---|---|---|---|---|---|---|
| BACMLEN | 0.0871 | -0.0767 | 0.1703 | 0.1724 | 0.1802 | 0.0914 | 0.1049 | 0.0395 | 0.1188 | 0.1982 |
| INTNDLN | 0.0277 | 0.0594 | 0.2353 | [illegible]745 | 0.1133 | -0.0268 | 0.0879 | 0.0504 | 0.1906 | 0.0777 |
| INWDRL | 0.1951 | 0.0204 | 0.4287 | [illegible]67 | -0.0273 | 0.0807 | 0.1368 | -0.1550 | 0.1343 | -0.0323 |
| OXLNL | 0.5720 | 0.1730 | 0.5626 | [illegible]36 | -0.0597 | -0.0480 | 0.1017 | -0.0425 | 0.2184 | 0.0705 |
| OWDL | 0.3629 | 0.1335 | 0.1635 | [illegible]34 | -0.0359 | -0.1075 | -0.0237 | 0.1021 | 0.0949 | 0.0897 |
| IPXAN | -0.1303 | -0.0363 | -0.2835 | 0.0819 | 0.1726 | -0.0684 | -0.0281 | -0.0043 | -0.0476 | 0.2180 |
| IPXPS | -0.0128 | 0.0684 | 0.0520 | -0.1249 | -0.0470 | 0.0976 | 0.0696 | 0.1091 | 0.0226 | -0.1470 |
| ISAN | 0.0956 | 0.0678 | -0.1133 | 0.0417 | -0.0120 | 0.2780 | 0.1513 | 0.1366 | 0.0774 | -0.0768 |
| ISPS | 0.2710 | 0.1097 | 0.1603 | 0.0299 | 0.0836 | 0.3820 | 0.2953 | 0.0248 | 0.1627 | 0.0089 |
| WINS | 0.2046 | -0.1276 | -0.0594 | 0.0223 | 0.1244 | 0.0304 | -0.0402 | -0.0297 | -0.1312 | 0.0787 |
| NECV | 1.0000 | -0.0597 | 0.3736 | 0.0027 | 0.1194 | 0.1745 | 0.1155 | 0.0330 | 0.1272 | 0.1539 |
| PINSV | -0.0597 | 1.0000 | 0.0336 | 0.1012 | -0.0285 | -0.0391 | -0.0351 | 0.0664 | 0.0242 | -0.0281 |
| PTLLN | 0.3736 | 0.0336 | 1.0000 | -0.0599 | 0.0424 | 0.0717 | 0.0918 | [illegible]29 | 0.1638 | 0.0260 |
| INTLN | 0.0027 | 0.1012 | -0.0599 | 1.0000 | 0.1891 | 0.1798 | 0.1929 | 0.2120 | 0.1712 | 0.2012 |
| NBR | 0.1194 | -0.0285 | 0.0424 | 0.1891 | 1.0000 | 0.5206 | 0.3505 | 0.3198 | 0.2859 | 0.5513 |
| IBRL | 0.1745 | -0.0391 | 0.0717 | 0.1798 | 0.5206 | 1.0000 | 0.6377 | 0.4375 | 0.4171 | 0.3212 |
| OBRL | 0.1155 | -0.0351 | 0.0918 | 0.1929 | 0.3505 | 0.6377 | 1.0000 | 0.2895 | 0.6775 | 0.4151 |
| IBRW | 0.0330 | 0.0664 | -0.0829 | 0.2120 | 0.3198 | 0.4375 | 0.2895 | 1.0000 | 0.3949 | 0.2884 |
| OCRW | 0.1272 | 0.0242 | 0.1638 | 0.1712 | 0.2859 | 0.4171 | 0.6775 | 0.3949 | 1.0000 | 0.2906 |
| PMXL | 0.1539 | -0.0281 | 0.0260 | 0.2012 | 0.5513 | 0.3212 | 0.4151 | 0.2884 | 0.2906 | 1.0000 |
| LBP | 0.2487 | -0.0549 | 0.1543 | 0.1874 | 0.2298 | 0.3801 | 0.2101 | 0.2701 | 0.1444 | 0.3802 |
| NDLOR | 0.0439 | 0.0139 | 0.1171 | 0.0760 | 0.4418 | 0.4752 | 0.4697 | 0.1905 | 0.2899 | 0.3538 |
| CCRLLN | 0.1524 | -0.0432 | 0.0364 | 0.0632 | 0.1699 | 0.1561 | 0.2488 | 0.1342 | 0.2956 | 0.3912 |
| CCRLWD | 0.0685 | 0.2023 | 0.1307 | 0.1769 | 0.0746 | -0.0765 | -0.0744 | 0.1622 | 0.0599 | 0.0095 |
| CCRTWD | 0.0918 | 0.0565 | 0.0680 | 0.2481 | 0.1472 | 0.3932 | 0.3328 | 0.4495 | 0.2362 | 0.2496 |
| CLRPFA | 0.1035 | 0.0122 | 0.0200 | 0.0558 | 0.3831 | 0.4560 | 0.3934 | 0.1676 | 0.2804 | 0.3476 |
| INTW | -0.0149 | 0.0024 | 0.0498 | 0.1668 | 0.1901 | 0.2675 | 0.3801 | 0.0925 | 0.3022 | 0.3821 |
| INTE | 0.1720 | -0.0207 | 0.0552 | 0.2001 | 0.5362 | 0.7176 | 0.5410 | 0.3977 | 0.3712 | 0.5048 |
| FMLLN | 0.0071 | 0.0460 | -0.0031 | 0.1534 | 0.0734 | 0.0598 | 0.1273 | 0.0082 | 0.1416 | 0.1624 |
| AMLLN | 0.2512 | -0.1264 | 0.0498 | 0.2280 | 0.3450 | 0.5065 | 0.4025 | 0.2672 | 0.2613 | 0.4331 |
| STDXLOL | 0.0206 | 0.0765 | 0.0002 | 0.1110 | 0.3478 | 0.0609 | -0.0089 | 0.3504 | 0.1164 | 0.1902 |
| VARDXLN | 0.0193 | -0.0582 | -0.0969 | 0.1768 | 0.0189 | 0.4269 | 0.2904 | 0.2117 | 0.1040 | 0.0526 |
| CRDWD | 0.1554 | 0.0345 | 0.1861 | 0.2445 | 0.1803 | 0.4302 | 0.3043 | 0.5254 | 0.2528 | 0.2895 |
| CRWWD | 0.1746 | 0.1073 | 0.1105 | 0.1930 | 0.1461 | 0.3637 | 0.2034 | 0.3733 | 0.1698 | 0.1580 |
| WAGS | 0.2876 | 0.0583 | -0.0846 | 0.0643 | 0.1415 | 0.0248 | -0.0351 | -0.0223 | -0.0416 | 0.1451 |
| VARGB | 0.2408 | 0.1247 | 0.0395 | -0.0173 | 0.0545 | 0.0475 | 0.0666 | 0.0184 | 0.0326 | 0.0426 |
| STRNL | 0.2152 | -0.0010 | 0.3977 | -0.1578 | 0.0006 | 0.1872 | 0.1770 | -0.1545 | 0.1208 | -0.0638 |
| NRNDFHD | 0.0585 | -0.0887 | 0.0537 | -0.0068 | 0.1935 | -0.3662 | -0.3943 | -0.1981 | -0.2519 | -0.2631 |
| TRLWR | 0.1328 | -0.0805 | 0.1395 | 0.0126 | 0.2738 | 0.6046 | 0.3948 | -0.4282 | 0.0858 | 0.1100 |
| QLWR | -0.0642 | -0.0513 | -0.1066 | 0.0266 | 0.0592 | 0.1677 | 0.2467 | -0.2202 | -0.5104 | 0.0751 |
| TAVLWR | 0.1021 | 0.0214 | -0.0528 | -0.0703 | 0.2292 | 0.1452 | -0.0915 | -0.0987 | -0.1310 | 0.1022 |
| CELLWR | 0.0756 | -0.1556 | -0.0495 | -0.0502 | 0.0910 | 0.1550 | 0.2375 | 0.0116 | 0.2044 | 0.3054 |
| CORLWR | -0.0184 | 0.0077 | -0.1324 | -0.1096 | 0.1194 | -0.0015 | 0.0747 | -0.2469 | 0.0648 | 0.0575 |
| CDRLMWR | -0.0566 | -0.0762 | -0.0683 | -0.0376 | 0.1632 | 0.0644 | 0.1507 | -0.0939 | 0.1285 | 0.1707 |
| TELBR | 0.0201 | -0.0954 | 0.0439 | 0.0528 | -0.1263 | 0.2024 | 0.2087 | -0.1706 | 0.0917 | 0.0272 |
| FLPLR | 0.0684 | 0.0861 | -0.0034 | -0.0479 | -0.3041 | -0.4388 | -0.4083 | -0.3234 | -0.3587 | -0.2276 |
| NFLWR | 0.1615 | -0.0537 | -0.0475 | -0.0284 | 0.1295 | 0.0753 | -0.1434 | 0.0101 | -0.1992 | 0.0106 |
| RNFHR | 0.0416 | 0.0241 | 0.0626 | 0.0343 | 0.3853 | 0.5223 | 0.4976 | 0.2439 | 0.3289 | 0.4795 |
| LFMLR | 0.2027 | -0.0999 | 0.0857 | -0.0109 | 0.1482 | 0.2436 | 0.1068 | 0.1878 | 0.0552 | 0.1491 |
| CPFCLR | -0.0736 | 0.0293 | -0.0691 | -0.0950 | 0.1752 | 0.1332 | 0.1378 | -0.0882 | 0.0426 | 0.0204 |



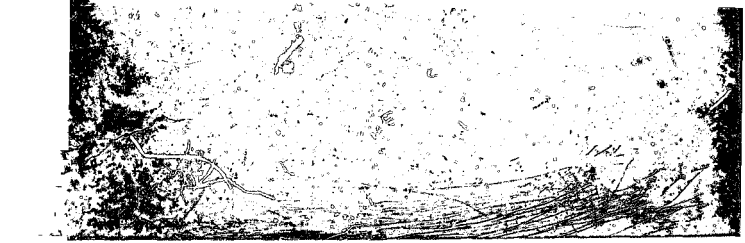


CANONICAL DISCRIMINANT ANALYSIS

POOLED WITHIN-CLASS CORRELATION MATRIX

| VARIABLE | LBRP | NFLOR | CORLLN | CORLWD | CORTWD | LCTPFA | INFW | INFL | FMXLN | AMXLN |
|---|---|---|---|---|---|---|---|---|---|---|
| RACHLEN | 0.1763 | 0.1138 | -0.0108 | 0.0561 | -0.0779 | 0.0475 | 0.1207 | 0.1460 | -0.0017 | 0.0800 |
| INTRDLN | 0.1065 | 0.0907 | 0.0209 | 0.1336 | -0.0533 | -0.0008 | -0.0256 | 0.0279 | 0.0602 | -0.0614 |
| LNWDRL | 0.1121 | 0.1751 | 0.1390 | -0.0346 | -0.0301 | 0.0439 | 0.1051 | 0.0879 | 0.0443 | -0.0411 |
| MXLNL | 0.1664 | -0.0480 | 0.1472 | 0.0897 | -0.0180 | 0.0507 | 0.0229 | -0.0039 | 0.0815 | 0.1152 |
| MXWDL | 0.0977 | -0.1976 | 0.0651 | 0.1899 | 0.0125 | 0.0100 | 0.0780 | 0.0233 | 0.0246 | 0.1115 |
| APXAN | -0.0557 | 0.0415 | -0.0050 | -0.0266 | 0.0536 | 0.0025 | 0.0139 | 0.0260 | 0.0262 | 0.0266 |
| APXPS | -0.1231 | 0.0122 | 0.0378 | 0.0171 | 0.0045 | 0.0254 | 0.0208 | -0.0063 | -0.0251 | 0.0966 |
| BSAN | 0.0495 | 0.0843 | -0.2038 | 0.0113 | 0.1112 | -0.05.1 | -0.0105 | 0.0065 | -0.0170 | 0.0699 |
| BSPS | 0.1715 | 0.3465 | -0.0229 | 0.0011 | 0.0628 | 0.0525 | 0.1591 | 0.1219 | 0.0501 | 0.2217 |
| SVINS | 0.0524 | -0.0559 | -0.0035 | 0.1318 | 0.0105 | 0.0139 | -0.1649 | 0.0796 | 0.0015 | 0.3009 |
| NSECV | 0.2487 | 0.0459 | 0.1536 | 0.0685 | -0.0916 | 0.0235 | -0.0789 | 0.1.1.. | 0.0071 | 0.2518 |
| PINSV | -0.0549 | 0.0139 | -0.0432 | 0.2023 | 0.0565 | 0.0.23 | 0.0024 | 0.0.5.. | 0.0.5. | -0.1258 |
| PTLLN | 0.1543 | 0.1113 | 0.0360 | 0.1307 | 0.0680 | 0.0.5. | 0.0989 | 0.0.5. | 0.0.5. | 0.0496 |
| LNTLN | 0.1878 | 0.0760 | 0.0632 | 0.1769 | 0.2481 | 0.0.5. | 0.1664 | 0.2001 | 0.1534 | 0.2280 |
| WDR | 0.2298 | 0.0418 | 0.1159 | 0.0746 | 0.1672 | 0.0.5. | 0.1901 | 0.1342 | 0.0724 | 0.1850 |
| LBRL | 0.1801 | 0.4758 | 0.1967 | -0.0365 | 0.1932 | 0.0.5. | 0.2.5. | 0.2778 | 0.0598 | 0.5055 |
| OBRL | 0.2101 | 0.4697 | 0.2484 | -0.0749 | 0.1328 | 0.0.5. | 0.2.5. | 0.2.5. | 0.0225 | 0.4228 |
| IBRL | 0.2701 | 0.1905 | 0.1382 | 0.1682 | 0.4525 | 0.0.5. | 0.2.5. | 0.2517 | 0.0084 | 0.2672 |
| OBRW | 0.1644 | 0.2899 | 0.2956 | 0.0599 | 0.2362 | 0.0.5. | 0.2.5. | 0.2712 | 0.1418 | 0.2673 |
| FMXL | 0.3802 | 0.3338 | 0.3712 | 0.0095 | 0.2596 | 0.0.5. | 0.2.5. | 0.2468 | 0.1674 | 0.3431 |
| LBRP | 1.0000 | 0.2192 | 0.2196 | 0.0590 | 0.3265 | 0.0.5. | 0.2.5. | 0.3775 | 0.0913 | 0.3919 |
| NFLOR | 0.2192 | 1.0000 | 0.0452 | -0.1215 | 0.1898 | 0.0.5. | 0.2.5. | 0.2451 | 0.0665 | 0.2140 |
| CORLLN | 0.2196 | 0.0452 | 1.0000 | 0.0031 | 0.1950 | 0.0.5. | 0.2.5. | 0.2170 | 0.5190 | 0.0811 |
| CORLWD | 0.0590 | -0.1215 | 0.0031 | 1.0000 | 0.2863 | 0.0.5. | 0.2.5. | 0.2401 | 0.0987 | 0.0496 |
| CORTWD | 0.3265 | 0.1898 | 0.1950 | 0.2863 | 1.0000 | 0.0343 | 0.2737 | 0.2847 | 0.0038 | 0.3256 |
| LCTPFA | 0.1592 | 0.2150 | 0.5184 | -0.0927 | 0.2348 | 1.0000 | 0.2823 | 0.2.5. | 0.1089 | 0.2427 |
| INFW | 0.2792 | 0.2764 | 0.3327 | -0.0238 | 0.0957 | 0.2823 | 1.0000 | 0.8.3. | 0.2404 | 0.5313 |
| INFL | 0.3775 | 0.2451 | 0.4991 | 0.0101 | 0.2607 | 0.2.5. | 0.8.3. | 1.0000 | 0.2772 | 0.4478 |
| FMXLN | 0.0913 | -0.0869 | 0.5390 | 0.0927 | 0.0038 | 0.4827 | 0.2.5. | 0.2.5. | 1.0000 | 0.2817 |
| AMXLN | 0.3919 | 0.2109 | 0.0811 | -0.0809 | 0.3256 | 0.2.5. | 0.5313 | 0.4478 | 0.2817 | 1.0000 |
| STMXLOL | 0.1308 | -0.1381 | 0.2082 | 0.2212 | 0.0705 | 0.0.5. | 0.1.5. | 0.0986 | 0.0787 | -0.1370 |
| VADMXLR | 0.0847 | 0.2320 | 0.0.5. | 0.2.5. | 0.2.5. | 0.2.5. | 0.2.5. | 0.2.5. | 0.0539 | 0.4011 |
| CRHWD | 0.3997 | 0.1194 | 0.0972 | 0.2736 | 0.7892 | -0.0927 | 0.2.5. | 0.2691 | -0.0991 | 0.3532 |
| CRHWD | 0.1934 | -0.0859 | -0.0116 | 0.2.5. | 0.5580 | 0.0.5. | 0.2.5. | 0.2.5. | 0.1971 | 0.2789 |
| VANGS | 0.0031 | -0.0573 | 0.1184 | 0.0659 | 0.0578 | 0.0.5. | 0.1.5. | 0.0793 | 0.0548 | 0.0205 |
| VANGB | -0.0819 | -0.0477 | 0.1490 | 0.1049 | 0.0178 | 0.0.5. | 0.0.5. | 0.0644 | 0.1000 | 0.1215 |
| SHIG | 0.0981 | 0.2750 | -0.0192 | -0.0.5. | -0.0065 | 0.0.5. | 0.0.5. | 0.1765 | 0.0274 | 0.0.5. |
| NWROTHD | -0.1297 | -0.3320 | -0.2623 | 0.0896 | -0.2447 | 0.2979 | -0.3963 | 0.3.5. | -0.1633 | -0.2638 |
| LBLWR | 0.1142 | 0.2120 | 0.0137 | -0.1756 | 0.0191 | 0.2250 | 0.1684 | 0.1979 | 0.0462 | 0.2.5. |
| OBLWR | 0.0223 | 0.1665 | -0.0883 | -0.1124 | 0.0428 | 0.0676 | -0.0003 | 0.0.5. | -0.0016 | 0.1.5. |
| IBWLWR | 0.1201 | -0.2208 | 0.1080 | -0.0228 | -0.0969 | 0.1403 | 0.1.5. | 0.1.5. | 0.0874 | 0.1.5. |
| CRLLWR | 0.1369 | 0.1068 | 0.7949 | -0.5897 | -0.0671 | 0.4241 | 0.2655 | 0.2826 | 0.3508 | 0.1.5. |
| CORLWR | -0.1490 | 0.0314 | 0.3816 | -0.2339 | 0.5907 | 0.0.5. | 0.1.5. | 0.1.5. | 0.0234 | 0.1.5. |
| CORLWWR | -0.0022 | 0.0672 | 0.4595 | -0.5295 | -0.7191 | 0.4477 | 0.3734 | 0.3728 | 0.5163 | 0.1.5. |
| STLLBR | 0.0334 | 0.2946 | 0.0159 | -0.1726 | 0.4709 | 0.3186 | 0.1487 | 0.2977 | 0.1038 | 0.1.5. |
| TFLPLR | -0.2804 | -0.2551 | 0.0046 | 0.0658 | -0.2620 | -0.0157 | -0.0522 | 0.1771 | 0.1200 | -0.1390 |
| INFLWR | 0.0825 | -0.1505 | 0.0373 | 0.0024 | -0.0086 | 0.0550 | 0.0659 | 0.0588 | 0.0.5. | 0.0020 |
| LRWTHR | 0.2459 | 0.4182 | 0.4134 | -0.0971 | 0.3.5. | 0.4945 | 0.4076 | 0.5682 | 0.2843 | 0.4527 |
| ALFWLR | 0.2736 | 0.2534 | 0.1392 | -0.1544 | 0.1560 | -0.1799 | -0.0537 | 0.1352 | 0.1.5. | 0.2646 |
| LCPFCLR | -0.1401 | 0.1284 | 0.0106 | -0.0615 | -0.1932 | 0.7283 | 0.3293 | 0.3219 | 0.1890 | 0.0655 |

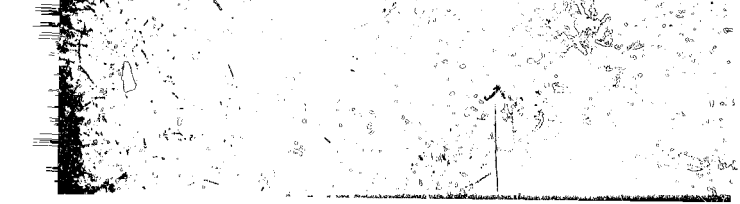




CANONICAL DISCRIMINANT ANALYSIS

POOLED WITHIN-CLASS CORRELATION MATRIX

| VARIABLE | STMKLOL | VACMOLN | CRMWND | CRMWMD | VANGS | VANGB | SHIHL | NWNOFND | IBLWR | OBLWR |
|---|---|---|---|---|---|---|---|---|---|---|
| RAGHLEN | 0.1107 | -0.0692 | 0.0419 | 0.0514 | 0.1157 | -0.1822 | -0.0465 | 0.5890 | 0.0385 | -0.0231 |
| INTNOLN | 0.2589 | -0.1962 | 0.0531 | 0.0118 | 0.1171 | -0.1082 | 0.0394 | 0.1566 | -0.0830 | -0.1339 |
| LNWORL | -0.0701 | 0.0699 | 0.0047 | -0.0339 | -0.3232 | 0.2151 | 0.7959 | -0.0282 | 0.1802 | -0.0875 |
| WXLNL | 0.0997 | -0.1245 | 0.0721 | 0.0940 | 0.0546 | 0.1715 | 0.2791 | 0.1247 | -0.0253 | -0.1870 |
| MXWDL | 0.1785 | -0.1615 | 0.0610 | 0.1167 | 0.3347 | 0.3503 | -0.4367 | 0.1286 | -0.2035 | -0.1383 |
| APXAN | -0.0145 | 0.1504 | -0.1243 | -0.0767 | 0.2438 | -0.0940 | -0.3073 | -0.1650 | -0.0207 | 0.0663 |
| APXPS | 0.0428 | -0.0184 | 0.1438 | 0.1382 | -0.4758 | -0.0134 | 0.0801 | -0.0615 | -0.0407 | 0.0189 |
| BSAN | -0.0075 | 0.0993 | 0.1759 | 0.1251 | 0.2237 | 0.2548 | -0.2091 | -0.1900 | 0.1457 | 0.0446 |
| BSPS | -0.0800 | 0.0275 | 0.1426 | 0.1476 | 0.0745 | 0.2656 | 0.3103 | 0.1823 | 0.2561 | 0.1009 |
| SVINS | 0.0839 | -0.0064 | -0.0892 | 0.0229 | 0.4391 | 0.1959 | -0.3894 | 0.0441 | 0.0668 | 0.2257 |
| NSCOV | 0.0206 | 0.0193 | 0.1759 | 0.1748 | 0.2878 | 0.2408 | 0.2152 | 0.0589 | 0.1924 | 0.0642 |
| PINSV | 0.1465 | -0.0547 | 0.0066 | 0.1072 | 0.0583 | 0.1297 | -0.0010 | -0.0887 | -0.0805 | -0.0513 |
| PTLIN | 0.0005 | 0.0904 | 0.1861 | 0.1105 | -0.0946 | 0.0395 | 0.3977 | 0.0057 | 0.1395 | 0.1066 |
| INTLN | 0.1110 | 0.1768 | 0.2465 | 0.1930 | 0.0683 | -0.0173 | 0.1578 | -0.0058 | 0.0126 | 0.0256 |
| NBR | 0.2479 | 0.0189 | 0.1803 | 0.1461 | 0.1415 | 0.0245 | 0.0006 | -0.1935 | 0.2736 | -0.0592 |
| IBRL | 0.0609 | 0.4269 | 0.4302 | 0.3637 | 0.0248 | 0.0675 | 0.1872 | -0.3662 | 0.6046 | 0.1677 |
| OBRL | -0.0089 | 0.2904 | 0.3093 | 0.2034 | -0.0351 | 0.0666 | 0.1770 | -0.3993 | 0.3948 | 0.2467 |
| IBRW | 0.3504 | 0.2117 | 0.5254 | 0.3733 | -0.0223 | 0.0184 | -0.1545 | -0.1981 | -0.8282 | -0.2202 |
| OBRW | 0.1164 | 0.1060 | 0.2528 | 0.1698 | -0.0416 | 0.0126 | 0.1208 | -0.2319 | 0.0836 | -0.5104 |
| PNKL | 0.1902 | 0.0526 | 0.2899 | 0.1580 | 0.1851 | 0.0486 | -0.0638 | -0.2631 | 0.1100 | 0.0751 |
| LBRP | 0.1308 | 0.0867 | 0.3907 | 0.1934 | -0.0045 | -0.0219 | 0.0994 | -0.1297 | 0.1148 | 0.0223 |
| NFLOR | -0.1381 | 0.2320 | 0.1194 | 0.0859 | -0.0873 | 0.0477 | 0.8750 | -0.3380 | 0.3182 | 0.1665 |
| CORLLN | 0.2080 | 0.0684 | 0.0972 | -0.0116 | 0.1184 | 0.1400 | -0.0192 | -0.2523 | 0.0911 | -0.0853 |
| CORLWD | 0.2218 | 0.2826 | 0.2736 | 0.4256 | -0.0959 | 0.1049 | -0.0745 | 0.0840 | -0.1754 | -0.1524 |
| CORTWD | -0.0705 | 0.7794 | 0.7895 | 0.5520 | -0.0578 | 0.0179 | -0.0388 | -0.3042 | 0.0191 | 0.0428 |
| ACTRTA | 0.2761 | 0.1907 | -0.0927 | -0.0098 | 0.0792 | 0.0823 | 0.0003 | -0.0193 | 0.0126 | 0.0676 |
| INTW | -0.1950 | 0.3149 | -0.0484 | -0.0875 | -0.1065 | -0.0760 | 0.0745 | -0.3953 | 0.1834 | 0.0003 |
| INTL | 0.0983 | 0.3263 | 0.2691 | 0.1577 | 0.0793 | 0.0694 | 0.0744 | -0.3383 | 0.1530 | 0.1254 |
| FNXLN | 0.0787 | 0.0539 | -0.0951 | -0.1998 | 0.0548 | 0.1000 | -0.0274 | -0.1633 | 0.0952 | -0.0016 |
| AMXLR | 0.1329 | 0.3061 | 0.2131 | 0.0780 | 0.0365 | 0.1213 | -0.0040 | -0.2638 | 0.2321 | 0.1018 |
| STMKLOL | 1.0000 | -0.2276 | 0.1710 | 0.2668 | 0.1298 | 0.0985 | -0.1216 | 0.1097 | -0.2176 | -0.0905 |
| VACMOLN | -0.2276 | 1.0000 | 0.1594 | 0.0597 | -0.1475 | -0.2148 | 0.0998 | -0.3502 | 0.8345 | 0.1555 |
| CRMWND | 0.1710 | 0.1594 | 1.0000 | 0.5978 | -0.0652 | -0.0270 | 0.0212 | -0.1938 | -0.0251 | -0.0046 |
| CRMWMD | 0.2668 | 0.0597 | 0.5978 | 1.0000 | -0.0082 | 0.0371 | 0.0466 | -0.1828 | 0.0675 | 0.0106 |
| VANGS | 0.1298 | -0.1475 | -0.0652 | -0.0082 | 1.0000 | 0.2940 | -0.2834 | 0.1066 | 0.0313 | 0.0406 |
| VANGB | 0.0985 | -0.2148 | -0.0270 | 0.0371 | 0.2940 | 1.0000 | -0.0789 | -0.0777 | 0.0690 | 0.1178 |
| SHINL | -0.1216 | 0.0998 | 0.0212 | -0.0466 | -0.2834 | -0.0789 | 1.0000 | -0.1284 | 0.3160 | 0.0073 |
| NWNOFND | 0.1097 | -0.3502 | -0.1938 | -0.1828 | 0.1066 | -0.0777 | -0.1284 | 1.0000 | -0.2219 | 0.0959 |
| IBLWR | -0.2176 | 0.2365 | -0.0251 | 0.0675 | 0.0313 | 0.0690 | 0.3160 | -0.2219 | 1.0000 | 0.3574 |
| OBLWR | -0.0905 | 0.1555 | -0.0046 | 0.0106 | 0.0406 | 0.1178 | 0.0073 | -0.0959 | 0.3574 | 1.0000 |
| IRVLWR | 0.1971 | -0.2511 | -0.0671 | -0.0535 | 0.1187 | 0.1421 | -0.0105 | 0.1736 | 0.8217 | 0.1332 |
| ORLLWR | 0.0306 | 0.1779 | -0.0831 | -0.0413 | 0.0319 | 0.0409 | 0.0076 | -0.2307 | 0.1426 | -0.0168 |
| CORLWR | 0.0025 | 0.0198 | -0.7516 | -0.4462 | 0.1017 | 0.0993 | -0.0069 | -0.0633 | 0.0081 | 0.0269 |
| CORLRWR | -0.0537 | 0.1009 | -0.3893 | -0.7402 | 0.0439 | 0.0677 | -0.0200 | -0.1032 | 0.1207 | 0.0114 |
| STLLWR | -0.8299 | 0.3168 | -0.1118 | -0.2104 | -0.0696 | -0.0686 | 0.1151 | -0.1978 | 0.3190 | 0.0619 |
| TFLPLR | -0.1733 | -0.0577 | -0.3582 | -0.2859 | 0.1103 | -0.0025 | -0.1503 | 0.2274 | -0.2333 | 0.0439 |
| INFLWR | 0.2367 | 0.2158 | 0.1120 | 0.0887 | 0.1133 | 0.1759 | -0.0571 | 0.2291 | -0.0450 | 0.1773 |
| LRNFWR | 0.0192 | 0.2348 | 0.2431 | 0.1263 | -0.0211 | -0.0057 | 0.1492 | -0.6883 | 0.3109 | 0.1398 |
| ALFWLR | 0.0827 | 0.0683 | 0.2902 | 0.2328 | -0.0170 | 0.0134 | 0.0335 | -0.2035 | 0.0698 | 0.0003 |
| LGPFOLR | -0.1834 | 0.0622 | -0.3796 | -0.2552 | 0.0193 | -0.0428 | -0.0401 | -0.1449 | 0.1970 | 0.0999 |

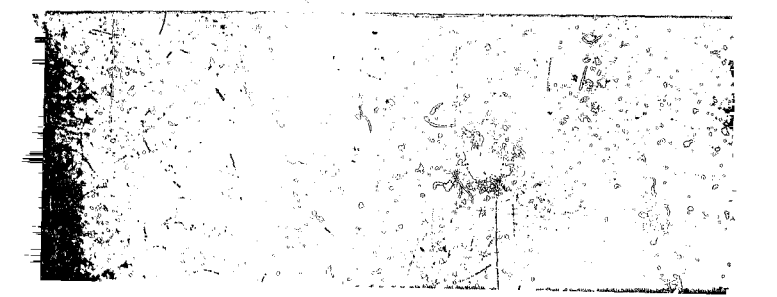


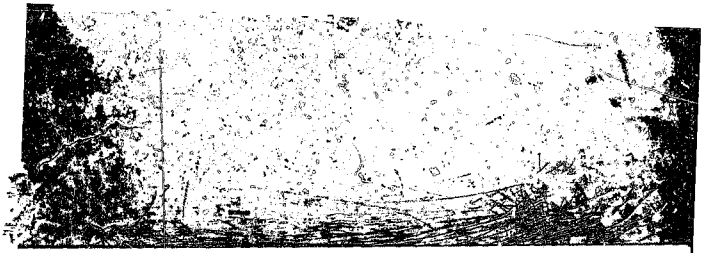


CANONICAL DISCRIMINANT ANALYSIS

*POOLED WITHIN-CLASS CORRELATION MATRIX*

| VARIABLE | INVLW | CRLLWR | CORLWR | CORLMWR | STLLBR | TFLPLR | INFLWR | LRNFHR | ALFNLR | LDPFCLR |
|---|---|---|---|---|---|---|---|---|---|---|
| RACMLEN | -0.0812 | -0.0356 | 0.0036 | -0.0064 | 0.0005 | -0.0452 | -0.0153 | -0.0499 | 0.1087 | -0.0280 |
| INTNBLN | -0.0527 | -0.0629 | -0.0525 | -0.0412 | -0.1939 | -0.0335 | -0.0129 | -0.0008 | -0.0134 | -0.0083 |
| LBNDBL | 0.0205 | 0.1956 | 0.0338 | 0.0806 | 0.0277 | -0.0400 | -0.0708 | 0.0960 | -0.0391 | -0.0542 |
| MXLNL | 0.0858 | 0.0676 | 0.0032 | -0.0301 | -0.0933 | 0.0565 | 0.0285 | -0.0142 | 0.0624 | -0.0958 |
| MXWDL | 0.0618 | -0.0652 | -0.0792 | -0.0995 | -0.1371 | 0.1153 | 0.0899 | -0.0882 | 0.0695 | -0.0430 |
| APXAN | 0.0520 | 0.0167 | 0.0992 | 0.0607 | 0.0818 | 0.0159 | -0.0846 | -0.0807 | -0.0344 | 0.0484 |
| APXPS | -0.1544 | 0.0033 | -0.0161 | -0.0935 | -0.0146 | -0.1059 | -0.1039 | -0.0318 | 0.0689 | 0.0112 |
| BSAN | -0.1047 | -0.2252 | -0.1605 | -0.1517 | 0.0718 | -0.1289 | -0.0560 | 0.0783 | 0.1453 | -0.0009 |
| BSPS | -0.0540 | -0.0535 | -0.0870 | -0.0376 | 0.1827 | -0.1721 | -0.0857 | 0.1594 | 0.1511 | 0.0083 |
| SVING | 0.1008 | -0.0865 | 0.0804 | -0.0090 | -0.0425 | -0.0924 | 0.2221 | -0.0690 | 0.1263 | 0.0136 |
| KSECV | 0.1021 | 0.0755 | -0.0184 | -0.0566 | 0.0501 | 0.0684 | 0.1615 | 0.0636 | 0.2027 | -0.0736 |
| PINSV | 0.0214 | -0.1556 | 0.0077 | -0.0769 | -0.0594 | 0.0861 | -0.0537 | 0.0241 | -0.0999 | 0.0293 |
| PTLLN | -0.0528 | -0.0583 | -0.1326 | -0.0439 | 0.0539 | -0.0031 | 0.0475 | 0.0626 | 0.0857 | 0.0691 |
| INTLN | -0.0703 | -0.0562 | -0.1096 | -0.0376 | 0.0521 | -0.0479 | -0.0284 | 0.0243 | -0.0109 | -0.0950 |
| RBR | 0.2292 | 0.0910 | 0.1596 | 0.1632 | 0.1263 | -0.1041 | 0.1295 | 0.3853 | 0.1432 | 0.1752 |
| LBRL | 0.1452 | 0.1150 | 0.0015 | 0.0644 | 0.0826 | -0.0688 | 0.0753 | 0.2023 | 0.2615 | 0.1372 |
| OBRL | -0.0915 | 0.2375 | 0.0797 | 0.1507 | 0.2067 | -0.4083 | -0.1434 | 0.4976 | 0.1068 | 0.1378 |
| LBRW | -0.0987 | 0.0116 | -0.2469 | -0.0439 | -0.1766 | -0.2224 | 0.0101 | 0.2439 | 0.1878 | 0.0682 |
| OBRW | -0.1310 | 0.2044 | 0.0648 | 0.1285 | 0.0917 | -0.3581 | -0.1992 | 0.3289 | 0.0552 | 0.0426 |
| PMXL | 0.1022 | 0.3054 | 0.0575 | 0.1707 | 0.0674 | -0.2270 | 0.0106 | 0.4795 | 0.1491 | 0.0804 |
| LBRP | 0.1201 | 0.1369 | -0.1490 | -0.0092 | 0.0334 | -0.2804 | 0.0825 | 0.2454 | 0.2784 | -0.1401 |
| BTLOP | -0.2208 | 0.1068 | 0.0315 | 0.0672 | 0.2940 | -0.2551 | -0.1526 | 0.0182 | 0.2534 | 0.1284 |
| CORLLW | 0.1080 | 0.7949 | 0.3816 | 0.4595 | 0.0158 | 0.0068 | -0.0373 | 0.0134 | -0.1502 | 0.0106 |
| CORLND | -0.0822 | -0.5897 | 0.2359 | 0.3693 | 0.1726 | 0.0659 | 0.0024 | 0.0071 | -0.1544 | -0.0615 |
| CORTND | -0.0965 | -0.0471 | -0.5507 | 0.3191 | 0.0789 | -0.2680 | -0.0226 | 0.3280 | 0.1569 | -0.1918 |
| LCTPFA | 0.1405 | 0.1421 | 0.6442 | 0.6477 | 0.2186 | -0.4157 | -0.0558 | 0.4469 | -0.1799 | 0.7283 |
| INFW | -0.3292 | 0.2655 | 0.3795 | 0.3736 | 0.1487 | -0.0522 | -0.6059 | 0.4076 | -0.0637 | 0.2295 |
| INFL | -0.1623 | 0.2806 | 0.2565 | 0.1728 | 0.2999 | -0.1771 | -0.6568 | 0.5682 | 0.1565 | 0.3219 |
| FMXLN | 0.0876 | 0.3528 | 0.1286 | 0.2163 | 0.1038 | 0.1260 | -0.0854 | 0.2562 | -0.7990 | 0.1890 |
| AMXLN | 0.1368 | 0.4892 | 0.2934 | 0.4068 | 0.2080 | -0.1390 | 0.0020 | 0.4527 | -0.3586 | 0.0655 |
| STMXLOL | 0.1971 | 0.0396 | 0.0025 | -0.0537 | -0.8299 | -0.1733 | 0.2367 | 0.0152 | 0.0827 | -0.7834 |
| VAOXLLN | 0.2510 | 0.1779 | 0.0108 | 0.1009 | 0.3168 | -0.2973 | -0.2150 | 0.3546 | 0.0661 | -0.3706 |
| CRMXHD | -0.0477 | -0.0681 | -0.7916 | -0.3893 | -0.1118 | 0.3582 | 0.1130 | 0.2431 | 0.2902 | -0.3706 |
| CRMXND | -0.0522 | -0.2413 | 0. 42 | -0.7402 | -0.2104 | -0.2854 | 0.0887 | 0.3263 | -0.2368 | -0.2592 |
| VANGL | 0.1167 | 0.0319 | 0. 7 | 0.0435 | -0.0966 | 0.1103 | 0.1376 | 0.0871 | -0.2772 | 0.0193 |
| VANGR | 0.1721 | 0.0409 | 0.0493 | 0.0677 | -0.0686 | -0.0025 | 0.1759 | -0.0057 | 0.0134 | -0.0428 |
| LCTNL | -0.0105 | 0.0474 | -0.0069 | -0.0800 | -0.1134 | 0.1903 | -0.0571 | 0.1592 | 0.0239 | -0.0401 |
| NNWOPHO | 0.1738 | -0.2907 | -0.0631 | -0.1032 | 0.1978 | 0.2276 | 0.2974 | -0.5885 | 0.0325 | -0.1849 |
| LBLWR | 0.2621 | 0.1482 | 0.0061 | 0.1207 | 0.1190 | 0.2233 | 0.0450 | 0.3709 | 0.0698 | 0.1970 |
| OBLWR | 0.1332 | -0.0168 | 0.0249 | 0.0114 | 0.0674 | 0.0235 | 0.1773 | 0.1198 | 0.0003 | 0.0999 |
| INVLWR | 1.0000 | 0.0996 | 0.1165 | 0.1380 | 0.1690 | 0.0582 | 0.6977 | 0.0374 | 0.0940 | 0.0813 |
| CRLCWR | 0.0996 | 1.0000 | 0.4360 | 0.5446 | 0.1088 | -0.0324 | -0.0174 | 0.3855 | -0.0283 | 0.0200 |
| CORLWR | 0.1165 | 0.4360 | 1.0000 | 0.7100 | 0.2087 | 0.1672 | -0.1275 | 0.1316 | -0.2273 | 0.5201 |
| CORLMWR | 0.1380 | 0.5446 | 0.7100 | 1.0000 | 0.2947 | 0.1328 | -0.0864 | 0.2067 | -0.2591 | 0.4152 |
| STLLBR | -0.1690 | 0.1088 | 0.2089 | 0.2947 | 1.0000 | 0.1283 | -0.2335 | 0.1860 | -0.0251 | 0.3362 |
| TFLPLR | 0.0582 | -0.0324 | 0.1875 | 0.1328 | 0.1283 | 1.0000 | 0.1460 | -0.1659 | -0.2755 | 0.1908 |
| INFLWR | 0.6977 | -0.0174 | -0.1275 | -0.0864 | -0.2335 | 0.1460 | 1.0000 | 0.0902 | 0.1152 | -0.1142 |
| LRNFHR | 0.0374 | 0.3855 | 0.1316 | 0.2067 | 0.1860 | -0.1659 | -0.0902 | 1.0000 | 0.0357 | 0.1603 |
| ALFNLR | 0.0940 | -0.0283 | -0.2273 | -0.2591 | -0.0251 | -0.2755 | 0.1152 | 0.0357 | 1.0000 | -0.2629 |
| LDPFCLR | 0.0213 | 0.0200 | 0.5381 | 0.4153 | 0.3362 | 0.1908 | -0.1142 | 0.1603 | -0.2629 | 1.0000 |





CANONICAL DISCRIMINANT ANALYSIS

MAHALANOBIS DISTANCES BETWEEN CLASSES

| SPECIES | DISCOLOR | TRANSVAA | UNIFLORA |
|---|---|---|---|
| DISCOLOR | . | 8.2961 | 8.7085 |
| TRANSVAA | 8.2961 | . | 6.3906 |
| UNIFLORA | 8.7085 | 6.3906 | . |

F STATISTICS, NDF=50 DDF=85

| SPECIES | DISCOLOR | TRANSVAA | UNIFLORA |
|---|---|---|---|
| DISCOLOR | . | 2.37733 | 2.61956 |
| TRANSVAA | 2.37733 | . | 4.66305 |
| UNIFLORA | 2.61956 | 4.66305 | . |

PROB > MAHALANOBIS DISTANCE

| SPECIES | DISCOLOR | TRANSVAA | UNIFLORA |
|---|---|---|---|
| DISCOLOR | . | 0.0002 | 0.0001 |
| TRANSVAA | 0.0002 | . | 0.0001 |
| UNIFLORA | 0.0001 | 0.0001 | . |

| | CANONICAL CORRELATION | ADJUSTED CANONICAL CORRELATION | APPROX STANDARD CANONICAL ERROR | SQUARED CANONICAL CORRELATION | EIGENVALUE OF INV(E)*H = CANRSQ/(1-CANRSQ) EIGENVALUE | DIFFERENCE | PROPORTION | CUMULATIVE |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.961733 | 0.947486 | 0.006437 | 0.924930 | 12.3209 | 9.5950 | 0.8188 | 0.8188 |
| 2 | 0.855341 | 0.801467 | 0.023014 | 0.731608 | 2.7259 | . | 0.1812 | 1.0000 |

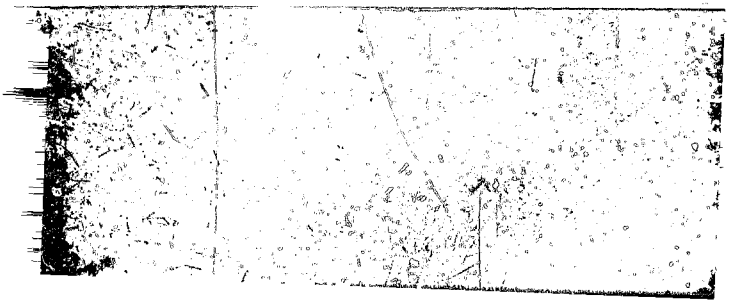
TESTS OF HO: THE CANONICAL CORRELATION IN THE CURRENT ROW AND ALL THAT FOLLOW ARE ZERO

| | LIKELIHOOD RATIO | F | NUM DF | DEN DF | PR > F |
|---|---|---|---|---|---|
| 1 | 0.02018816 | 10.2765 | 100 | 170 | 0.0001 |
| 2 | 0.26839171 | 4.7842 | 49 | 86 | 0.0001 |

MULTIVARIATE TEST STATISTICS AND F APPROXIMATIONS
S=2 M=23.5 N=42

| STATISTIC | VALUE | F | NUM DF | DEN DF | PR > F |
|---|---|---|---|---|---|
| WILKS' LAMBDA | 0.02018816 | 10.277 | 100 | 170 | 0.0001 |
| PILLAI'S TRACE | 1.656538 | 8.296 | 100 | 172 | 0.0001 |

NOTE: F STATISTIC FOR ROY'S GREATEST ROOT IS AN UPPER BOUND
F STATISTIC FOR WILKS' LAMBDA IS EXACT



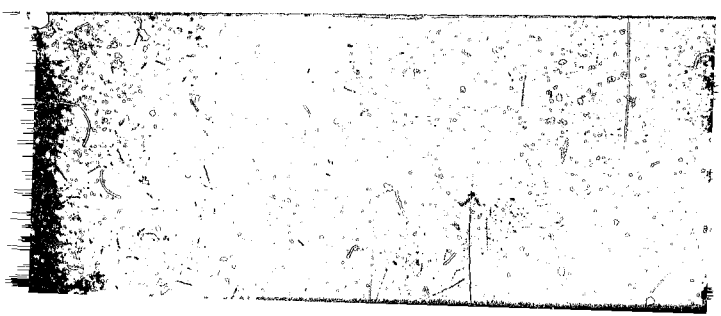


CANONICAL DISCRIMINANT ANALYSIS

MULTIVARIATE TEST STATISTICS AND F APPROXIMATIONS
S=2 M=23.5 N=42

| STATISTIC | VALUE | F | NUM DF | DEN DF | PR > F |
|---|---|---|---|---|---|
| HOTELLING-LAWLEY TRACE | 15.0468 | 12.639 | 100 | 168 | 0.0001 |
| ROY'S GREATEST ROOT | 12.3209 | 21.192 | 50 | 86 | 0.0001 |

NOTE: F STATISTIC FOR ROY'S GREATEST ROOT IS AN UPPER BOUND
F STATISTIC FOR WILKS' LAMBDA IS EXACT

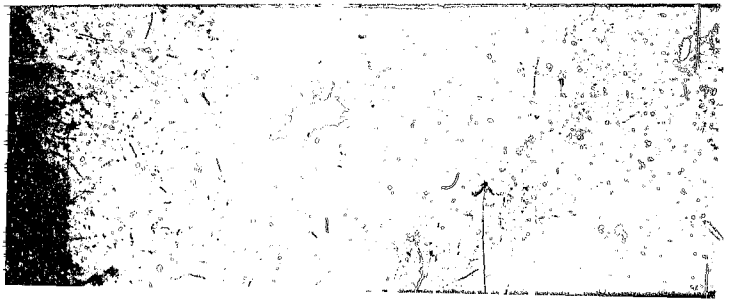


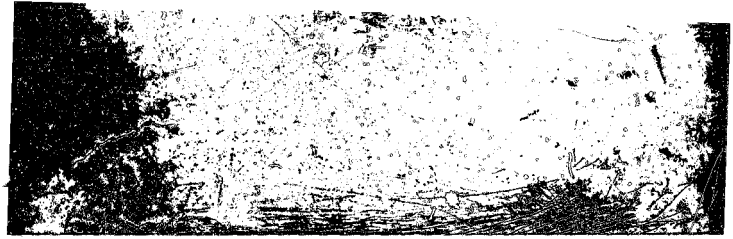


CANONICAL DISCRIMINANT ANALYSIS

TOTAL CANONICAL STRUCTURE

| | CAN1 | CAN2 |
|---|---|---|
| RACHLEN | -0.1381 | 0.2854 |
| INTRDLN | 0.1191 | 0.2205 |
| LANDAL | -0.2349 | 0.2396 |
| MXLRL | -0.4616 | 0.2287 |
| MXNDL | -0.1697 | 0.0222 |
| APKAN | 0.1194 | -0.0323 |
| APKPS | 0.1065 | 0.1136 |
| BSAN | 0.2462 | -0.0639 |
| BSPS | 0.1372 | 0.0016 |
| SVIBS | -0.1737 | 0.0163 |
| RSECV | -0.2320 | -0.1148 |
| PINSV | -0.3885 | 0.0429 |
| PTLLN | 0.2161 | -0.1665 |
| INTLN | -0.0667 | 0.2165 |
| NBR | 0.8693 | -0.1155 |
| IBRL | 0.8656 | 0.0378 |
| OBRL | 0.6720 | 0.0849 |
| IBRW | 0.5455 | 0.1325 |
| OBRW | 0.8035 | 0.1599 |
| PNXL | 0.8337 | -0.0507 |
| LBRP | 0.7217 | 0.0236 |
| RFLDR | 0.8433 | 0.1146 |
| CORLLN | 0.6168 | -0.3880 |
| CORLWD | 0.8680 | -0.0685 |
| CORTWD | 0.5294 | -0.1241 |
| LCTPFA | 0.7270 | 0.0258 |
| INFW | 0.8022 | 0.2667 |
| INFL | 0.8205 | 0.0459 |
| FMXLN | 0.7408 | -0.1082 |
| AMXLN | 0.6696 | -0.0706 |
| STKLLOL | 0.2934 | -0.1924 |
| VAOPLN | 0.0764 | 0.3661 |
| CAMAWD | 0.5783 | -0.1294 |
| CAMAWD | 0.1907 | -0.1374 |
| VANES | -0.0884 | 0.1564 |
| VANGB | 0.3432 | -0.1511 |
| SHLNL | -0.2404 | 0.2119 |
| WANGFM2 | -0.0656 | -0.0971 |
| IBLNG | 0.7359 | -0.0143 |
| OBLNG | 0.2093 | -0.2981 |
| INFLNR | -0.3091 | -0.5035 |
| CRLF AL | 0.4467 | -0.3423 |
| POTLAR | 0.2568 | 0.0493 |
| CAMLAR | 0.5945 | 0.0372 |
| SHTLOR | 0.8705 | 0.2891 |
| TRAILER | -0.8210 | -0.1159 |
| INFLWR | -0.4347 | -0.5599 |
| LRNFWR | 0.7636 | 0.0305 |
| ALFRLR | -0.4786 | 0.0966 |
| LOFFCLR | 0.2457 | 0.2905 |





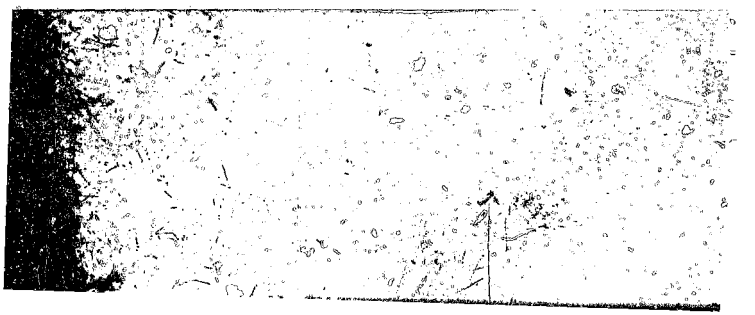
CANONICAL DISCRIMINANT ANALYSIS

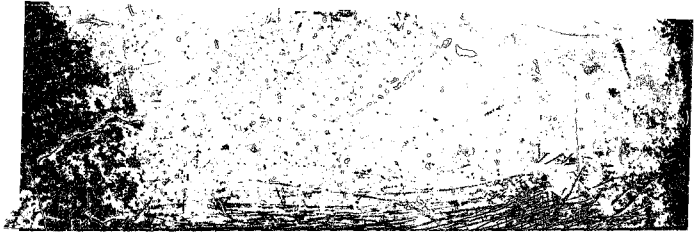
BETWEEN CANONICAL STRUCTURE

| | CAN1 | CAN2 |
|---|---|---|
| RACMLEN | -0.8670 | 0.8842 |
| INTNDLN | 0.6052 | 0.7961 |
| LNKDRL | -0.8282 | 0.5604 |
| RKLAL | -0.8083 | 0.4183 |
| KKMDL | -0.9913 | 0.1156 |
| APKAN | 0.9723 | -0.2336 |
| APXPS | 0.7255 | 0.6882 |
| BSAN | 0.9570 | -0.2809 |
| BSPS | 0.9999 | 0.0106 |
| SVIMS | -0.9965 | 0.0832 |
| RSLCV | -0.9268 | -0.3755 |
| PJNSV | -0.9953 | 0.0968 |
| PTLLN | 0.8288 | -0.5592 |
| INTLN | -0.1083 | 0.9932 |
| NBR | 0.9934 | -0.1148 |
| IBRL | 0.9992 | 0.0398 |
| OBRL | 0.9963 | 0.0862 |
| OBRV | 0.9751 | 0.2217 |
| OBRW | 0.9867 | 0.1782 |
| PWDL | 0.9985 | -0.0548 |
| LBRP | 0.9996 | 0.0291 |
| RFLDR | 0.9929 | 0.1199 |
| CORLLN | 0.8707 | -0.4982 |
| CORLWD | 0.9751 | -0.2217 |
| CORTWD | 0.9830 | -0.1787 |
| LCTPFA | 0.9995 | 0.0315 |
| INTW | 0.9990 | 0.0445 |
| INFL | 0.9988 | 0.0497 |
| PWK-L | 0.9917 | -0.1298 |
| ANKLN | 0.9951 | -0.0916 |
| STKXLOL | 0.9638 | -0.2668 |
| VACNXLR | 0.2297 | 0.9713 |
| CRNGWD | 0.9839 | -0.1790 |
| CRNNWD | 0.8420 | -0.5395 |
| VANCS | -0.5365 | 0.8439 |
| VANGB | 0.9312 | -0.3646 |
| SWING | -0.7925 | 0.6099 |
| NNNOFHD | -0.9951 | -0.0991 |
| IBLWR | 0.9899 | -0.0172 |
| OBRWR | 0.7291 | -0.6891 |
| IRVLWR | -0.5861 | -0.8230 |
| CRLLWR | 0.8083 | -0.5632 |
| CORCWR | 0.9578 | 0.1559 |
| CORLWWR | 0.9985 | 0.0535 |
| STLLBR | 0.7736 | 0.6336 |
| TFLPLR | -0.8922 | -0.1245 |
| INFLWR | -0.6376 | -0.7534 |
| LNNFWR | 0.9994 | 0.0356 |
| ALFWLR | -0.9843 | 0.1766 |
| LCPFCLR | 0.6906 | 0.7232 |

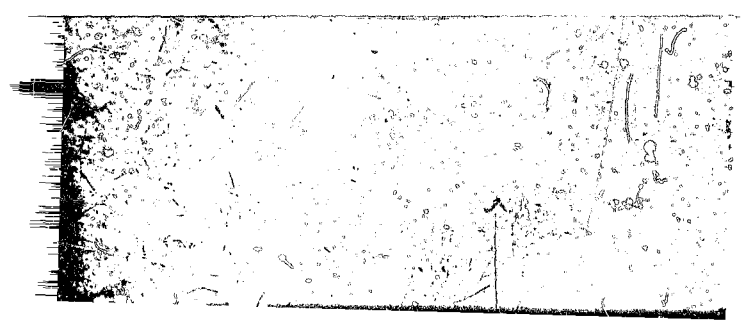
CANONICAL DISCRIMINANT ANALYSIS

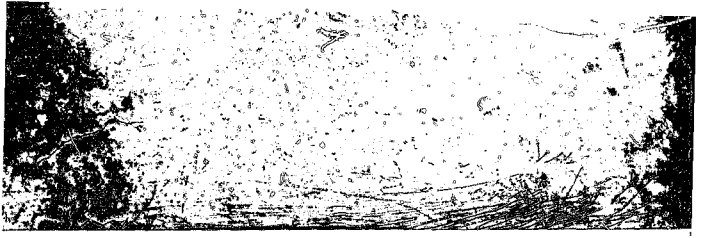
WITHIN CANONICAL STRUCTURE





| | CAM1 | CAM2 |
|---|---|---|
| RACHLEN | -0.0382 | 0.1538 |
| INTNDLN | 0.0480 | 0.1176 |
| LNWDRL | -0.0927 | 0.1334 |
| RRLNL | -0.1369 | 0.1340 |
| RRWDL | -0.0671 | 0.0117 |
| APKAN | 0.0230 | -0.0160 |
| APKPS | 0.0295 | 0.0595 |
| BSAN | 0.0696 | -0.0148 |
| BSI | 0.0370 | 0.0009 |
| RVINS | -0.0083 | 0.0086 |
| NSECV | -0.0715 | -0.0616 |
| FINGV | -0.1149 | 0.0238 |
| PTLLN | 0.0613 | -0.0680 |
| INTLN | -0.0187 | 0.1894 |
| ARR | 0.0790 | -0.1177 |
| IBRL | 0.1986 | 0.0337 |
| OBRL | 0.4625 | 0.0814 |
| IBRW | 0.1773 | 0.0857 |
| OBRW | 0.3592 | 0.1336 |
| PRRL | 0.3832 | -0.0440 |
| LBRP | 0.2748 | 0.0170 |
| RFLOR | 0.4007 | 0.1009 |
| CORLLN | 0.2304 | -0.2740 |
| CORLWD | 0.0761 | -0.0366 |
| CORTWD | 0.2106 | -0.0815 |
| LCTPTA | 0.2788 | 0.0187 |
| INFW | 0.3700 | 0.2326 |
| INFL | 0.3698 | 0.0388 |
| FRRLN | 0.2918 | -0.0806 |
| ARRLN | 0.2406 | -0.0507 |
| STRKLOL | 0.0850 | -0.1594 |
| YAGRKLN | 0.0021 | 0.1991 |
| CRRKWD | 0.2021 | -0.0781 |
| CRRKWD | 0.0232 | -0.0729 |
| YAXGS | -0.0245 | 0.0821 |
| YANGB | 0.1086 | -0.0837 |
| SHINL | -0.0707 | 0.1197 |
| WRRGTHD | -0.5350 | -0.0951 |
| IBLWR | 0.2862 | -0.0105 |
| OBLWR | 0.0997 | -0.1209 |
| INVLWR | -0.0994 | -0.3061 |
| CRLLWR | 0.1933 | -0.2076 |
| CORLWR | 0.0725 | 0.0243 |
| CORLWGR | 0.1987 | 0.0235 |
| STLLBR | 0.0787 | 0.1370 |
| FILPLR | -0.3714 | -0.0991 |
| INFLWR | -0.1343 | -0.3757 |
| LNLFWR | 0.3085 | 0.0233 |
| ALFNLR | -0.1484 | 0.0566 |
| LCFFCLR | 0.0720 | 0.1602 |

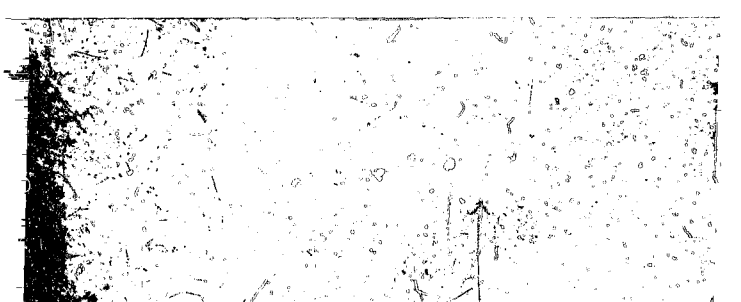


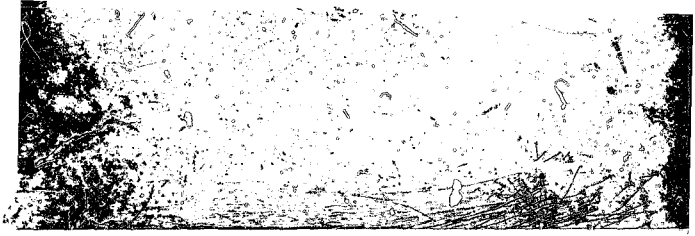


CANONICAL DISCRIMINANT ANALYSIS

STANDARDIZED CANONICAL COEFFICIENTS

| | CAN1 | CAN2 |
|---|---|---|
| RACHLEN | 0.2613 | 0.5253 |
| INTNDLN | 0.0519 | 0.1980 |
| LNWDRL | -0.4682 | 0.4423 |
| MXLNL | 0.2806 | 0.1751 |
| MXWDL | 0.0886 | 0.4436 |
| APXAN | -0.3922 | -0.0816 |
| APXPS | -0.0871 | 0.4413 |
| BSAN | -0.0896 | -0.4277 |
| BSPS | -0.2561 | -0.2804 |
| SVINS | -0.3409 | 0.1800 |
| NSECV | -0.0095 | -0.2838 |
| PINSV | -0.1878 | -0.1933 |
| PTLLN | 0.0448 | -0.5498 |
| INTLN | -0.4478 | 0.0399 |
| WPR | 0.6431 | -0.9393 |
| IBRL | -0.2360 | -0.7806 |
| OBRL | 0.1796 | -0.2183 |
| IBRD | 0.4536 | 3.1565 |
| OBRW | -0.0491 | -0.1240 |
| PMXL | -0.0216 | -0.2776 |
| LBRP | 0.2371 | 0.3609 |
| NFLOR | 0.3170 | 0.3999 |
| CORLLN | -1.8033 | 0.5356 |
| CORLWD | 1.2409 | -0.9717 |
| CORTWD | 0.0109 | -0.4751 |
| LCTPTA | -2.8607 | -2.8902 |
| INFW | 0.7875 | -0.3111 |
| ISFL | -0.3123 | 0.0266 |
| FMXLN | 0.4779 | 0.9023 |
| ANXLN | -0.1942 | 0.0101 |
| STMXLGL | 0.3985 | -0.3002 |
| VACHXLR | -0.1960 | 0.0947 |
| CRMXWD | 0.0366 | 1.9561 |
| CRMWD | 1.7741 | 0.7880 |
| VANGS | 0.1450 | 0.5726 |
| VANGB | -0.0875 | 0.1065 |
| SHINL | -0.2308 | 0.3437 |
| NMROFWD | -1.9672 | -1.1996 |
| JBLWR | 0.9509 | 4.1057 |
| OBLWR | 0.1000 | -0.2725 |
| INVLWR | -0.1672 | 0.8217 |
| GRLLWR | 2.0208 | -1.7639 |
| CORLWR | -0.0884 | 1.0747 |
| CORLWRR | 1.6754 | 1.4595 |
| STLLBR | 0.4334 | -0.1075 |
| TFLPLR | -0.3751 | 0.2953 |
| INFLWR | 0.2565 | -0.1214 |
| LRNFNR | -1.0384 | 0.0371 |
| ALFNLR | -0.0713 | 0.6578 |
| LCPFCLR | 0.6956 | 1.3511 |

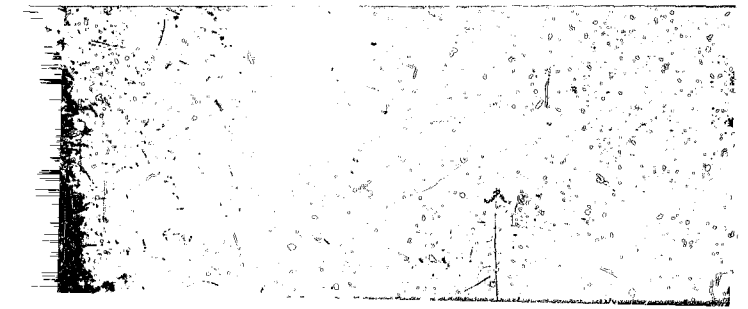




CANON.CAL DISCRIMINANT ANALYSIS

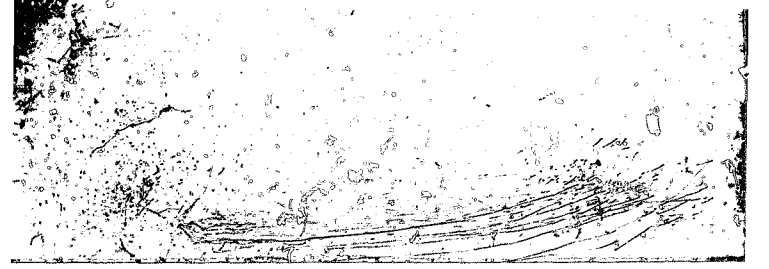
RAW CANONICAL COEFFICIENTS

| | CAN1 | CAN2 |
|---|---|---|
| RACNLEN | 0.2613145003 | 0.5295287715 |
| INTNDLN | 0.0519347703 | 0.1950397743 |
| LNGRL | -0.4602596744 | 0.1407976083 |
| MXLNL | 0.2796538623 | 0.1744931963 |
| MXWDL | 0.0883466683 | 0.4462143312 |
| APKAN | -0.3941176946 | -0.0582007779 |
| APKP3 | -0.0875398322 | 0.4463771406 |
| BSAN | -0.0898896268 | -0.8289460000 |
| BSP3 | -0.2579851184 | -0.2884132264 |
| SVINS | -0.3918856041 | 0.1408084470 |
| NSEOV | -0.0004173276 | -0.2828138046 |
| PINSV | -0.1872946608 | -0.1928784647 |
| PILLN | 0.0845379357 | -0.5567149023 |
| INTLN | -0.8461291145 | 0.0397321188 |
| NBR | 0.6466861484 | -0.9944896695 |
| IBRL | -0.2368864461 | -4.7776896561 |
| OBRL | 0.1807637150 | -0.2197756883 |
| IBRW | 0.4510063033 | 3.1410371660 |
| OBRW | 0.0495415963 | -0.1243081179 |
| PXXL | -0.0218136940 | -0.6762120753 |
| LBRP | 0.2005115528 | 0.3654011498 |
| NFLOR | 0.3186258869 | 0.4018782757 |
| CORLLN | -1.7967137225 | 0.5336675940 |
| CORLWD | 1.2270238766 | -0.9008023527 |
| CONTHD | -0.0109177007 | -0.4741143237 |
| LCTPPA | -2.2568426528 | -2.8850056703 |
| INFW | 0.7861508840 | -0.3105525581 |
| INFL | -2.2125350227 | 0.2068774883 |
| FWLN | 0.6768788947 | 0.9004228896 |
| ANGJN | -0.1538357134 | 0.0100051987 |
| STXXLOL | 0.3971798643 | -0.2591311156 |
| VACWLN | -0.1853259984 | 0.0941359732 |
| CRWWD | 0.0366031300 | 1.5950993794 |
| CRWWD | 0.7712758623 | 0.7851109252 |
| VANGS | 0.1444428072 | 0.5704889901 |
| VANGB | -0.0872931338 | 0.1028906549 |
| BNINL | -0.2300988337 | 0.1421728300 |
| WWNOTHD | -1.9479986033 | -1.1955553206 |
| IDLNR | 0.9577731621 | 4.1251150177 |
| OBLNR | 0.1002126239 | -0.2731998650 |
| INVLNR | -0.1665596402 | 0.2209946145 |
| CRLLWR | 2.0133624493 | -1.7576026330 |
| CORLWR | -0.0888757114 | 1.6708524432 |
| CORLNWR | 1.6730729111 | -1.4526351127 |
| STLLBR | 0.4434112200 | -0.1079771640 |
| TPLPLR | -0.3754909518 | 0.2856611723 |
| INFLWR | 0.5565962801 | -0.5199945880 |
| LNNFRR | -1.0384125512 | 0.0317052760 |
| ALPNLR | -0.0711061129 | 0.4255279715 |
| LCPFCLR | 0.6933899014 | 1.3467911403 |



## APPENDIX VA

### Summary of Principal Components Analysis for 150 Female OTUs

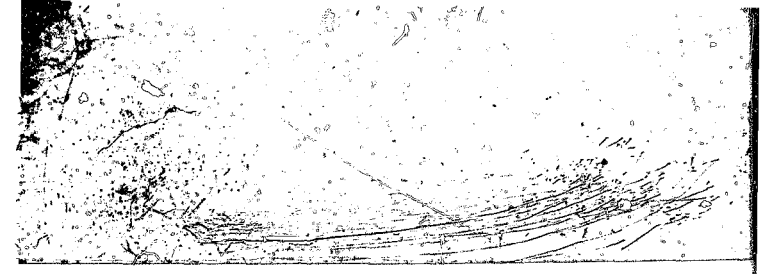


IDENTIFICATION: CHARACTER CORRELATION MATRIX



| | RACMLN | INNDLN | NBR | IBRW | OBRW | INNDW | PMSL | LBRP | INFL | INFW |
|---|---|---|---|---|---|---|---|---|---|---|
| RACMLN | 1.000 | | | | | | | | | |
| INNDLN | 0.454 | 1.000 | | | | | | | | |
| NBR | 0.070 | 0.153 | 1.000 | | | | | | | |
| IBRW | 0.111 | 0.233 | 0.409 | 1.000 | | | | | | |
| OBRW | 0.097 | 0.133 | 0.633 | 0.542 | 1.000 | | | | | |
| INNDW | 0.097 | 0.177 | 0.819 | 0.606 | 0.786 | 1.000 | | | | |
| PMSL | 0.095 | -0.033 | 0.552 | 0.168 | 0.327 | 0.255 | 1.000 | | | |
| LBRP | -0.002 | 0.018 | 0.498 | 0.232 | 0.503 | 0.552 | 0.601 | 1.000 | | |
| INFL | 0.007 | 0.005 | 0.815 | 0.354 | 0.650 | 0.800 | 0.639 | 0.591 | 1.000 | |
| INFW | 0.046 | 0.006 | 0.689 | 0.328 | 0.527 | 0.802 | 0.603 | 0.487 | 0.637 | 1.000 |
| VANGS | 0.019 | 0.006 | 0.118 | 0.087 | 0.022 | 0.061 | -0.006 | 0.055 | 0.052 | 0.093 |
| VANGB | -0.067 | -0.071 | 0.315 | 0.006 | 0.148 | 0.249 | 0.177 | 0.143 | 0.319 | 0.235 |
| SWINL | -0.007 | -0.009 | -0.129 | 0.000 | -0.137 | -0.181 | -0.178 | -0.094 | -0.166 | -0.224 |
| LRNDRL | -0.086 | -0.176 | -0.294 | -0.176 | -0.269 | -0.388 | -0.260 | -0.215 | -0.355 | -0.381 |
| RNLNL | 0.065 | 0.040 | -0.500 | -0.214 | -0.407 | -0.519 | -0.450 | -0.375 | -0.509 | -0.509 |
| RNNDL | 0.156 | 0.221 | -0.192 | -0.029 | -0.131 | -0.114 | -0.177 | -0.139 | -0.198 | -0.117 |
| APKNB | 0.027 | 0.131 | 0.329 | 0.220 | 0.179 | 0.304 | 0.206 | 0.154 | 0.278 | 0.324 |
| APKFS | 0.018 | -0.030 | -0.234 | -0.129 | -0.249 | -0.263 | -0.225 | -0.153 | -0.277 | -0.258 |
| BSAW | 0.063 | 0.102 | 0.322 | 0.159 | 0.103 | 0.17 | 0.251 | 0.278 | 0.431 | 0.381 |
| BSPS | 0.031 | 0.050 | 0.258 | 0.097 | 0.226 | 0.322 | 0.249 | 0.274 | 0.324 | 0.308 |
| SVINS | 0.044 | 0.047 | 0.120 | -0.014 | 0.036 | 0.062 | 0.061 | 0.029 | 0.078 | 0.126 |
| NSEGV | 0.008 | -0.021 | -0.241 | -0.198 | -0.125 | -0.258 | -0.204 | -0.161 | -0.305 | -0.288 |
| PINSV | 0.173 | 0.234 | -0.218 | -0.029 | -0.186 | -0.282 | -0.192 | -0.218 | -0.290 | -0.267 |
| PILLN | 0.080 | 0.029 | 0.192 | 0.083 | 0.165 | 0.139 | 0.285 | 0.084 | 0.283 | 0.302 |
| INTLN | 0.162 | 0.099 | -0.046 | 0.051 | -0.065 | 0.011 | -0.047 | 0.089 | -0.026 | -0.011 |
| NFLOR | 0.010 | 0.053 | 0.611 | 0.353 | 0.663 | 0.859 | 0.568 | 0.377 | 0.762 | 0.770 |
| CORLLN | 0.092 | 0.110 | 0.138 | 0.067 | 0.081 | 0.277 | 0.191 | 0.147 | 0.386 | 0.309 |
| CORLWD | -0.131 | -0.072 | 0.161 | 0.189 | 0.161 | 0.142 | 0.183 | 0.052 | 0.173 | 0.205 |
| CORTWD | 0.041 | -0.003 | 0.670 | 0.105 | 0.097 | 0.083 | 0.044 | -0.152 | 0.133 | 0.087 |
| STRDLDL | 0.098 | 0.100 | 0.342 | 0.137 | 0.144 | 0.325 | 0.237 | 0.256 | 0.422 | 0.343 |
| STBLN | -0.022 | -0.060 | 0.601 | 0.262 | 0.539 | 0.663 | 0.521 | 0.478 | 0.782 | 0.662 |
| STBND | 0.126 | 0.129 | 0.291 | 0.161 | 0.169 | 0.266 | 0.176 | 0.119 | 0.257 | 0.330 |
| ACMXLN | 0.111 | -0.672 | 0.625 | 0.126 | 0.344 | 0.486 | 0.392 | 0.332 | 0.682 | 0.641 |
| ACMXWD | -0.017 | -0.159 | 0.080 | 0.178 | 0.165 | 0.161 | 0.077 | 0.102 | 0.228 | 0.199 |
| HVPAC | -0.156 | 0.006 | 0.673 | 0.284 | 0.491 | 0.539 | 0.529 | 0.481 | 0.596 | 0.542 |
| CHKWND | 0.092 | 0.330 | 0.195 | 0.380 | 0.200 | 0.337 | 0.115 | -0.001 | 0.263 | 0.329 |
| CRMRND | -0.043 | 0.069 | -0.064 | 0.095 | -0.078 | -0.013 | -0.077 | -0.102 | -0.140 | -0.069 |
| NWHOFHD | 0.031 | 0.104 | -0.587 | -0.197 | -0.611 | -0.713 | -0.517 | -0.446 | -0.702 | -0.596 |
| IBLNR | -0.083 | -0.018 | 0.676 | -0.116 | 0.501 | 0.619 | 0.552 | 0.549 | 0.793 | 0.616 |
| OBLNR | -0.051 | -0.057 | 0.330 | -0.127 | -0.060 | 0.216 | 0.294 | 0.263 | 0.362 | 0.299 |
| INVLNR | -0.106 | -0.13 | 0.229 | -0.354 | -0.159 | -0.192 | 0.156 | 0.194 | 0.169 | -0.065 |
| CRLLNR | 0.127 | 0.167 | 0.274 | -0.032 | -0.009 | 0.211 | 0.081 | 0.124 | 0.299 | 0.202 |
| ACLNR | 0.128 | 0.062 | 0.413 | 0.035 | 0.283 | 0.347 | 0.387 | 0.365 | 0.615 | 0.596 |
| CORCHR | -0.080 | -0.062 | 0.709 | 0.218 | 0.593 | 0.721 | 0.564 | 0.597 | 0.852 | 0.679 |
| STLLBR | -0.031 | -0.088 | 0.607 | 0.265 | 0.642 | 0.689 | 0.536 | 0.562 | 0.768 | 0.657 |
| TFLPLR | 0.196 | -0.050 | -0.591 | -0.296 | -0.508 | -0.684 | -0.454 | -0.494 | -0.630 | -0.516 |
| INFLWR | -0.081 | 0.030 | 0.168 | 0.034 | 0.169 | 0.047 | 0.009 | 0.152 | 0.201 | -0.364 |
| LRNFWR | -0.144 | 0.047 | 0.639 | 0.379 | 0.637 | 0.781 | 0.651 | 0.466 | 0.784 | 0.649 |

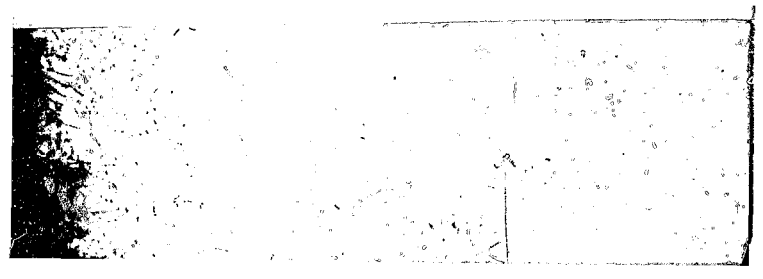


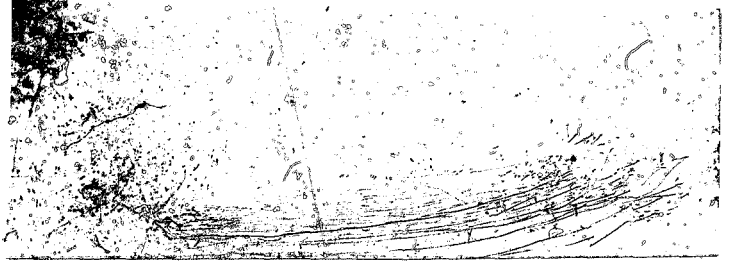


IDENTIFICATION: CHARACTER CORRELATION MATRIX



| | VANGS | VANGB | SHTHL | LNWDRL | MXLNL | MXWDL | APXAN | APXPS | BSAW | BSPS |
|---|---|---|---|---|---|---|---|---|---|---|
| VANGS | 1.000 | | | | | | | | | |
| VANGC | 0.309 | 1.000 | | | | | | | | |
| SHTHL | 0.008 | -0.145 | 1.000 | | | | | | | |
| LNWDRL | -0.089 | -0.316 | 0.783 | 1.000 | | | | | | |
| MXLNL | -0.003 | -0.162 | 0.398 | 0.494 | 1.000 | | | | | |
| MXWDL | 0.085 | 0.150 | -0.460 | -0.498 | 0.483 | 1.000 | | | | |
| APXAN | 0.079 | 0.181 | -0.356 | -0.486 | -1.475 | 0.112 | 1.000 | | | |
| APXPS | 0.043 | -0.142 | -0.060 | 0.098 | 0.294 | 0.181 | -0.456 | 1.000 | | |
| BSAW | 0.170 | 0.376 | -0.382 | -0.611 | -0.532 | 0.423 | 0.287 | -0.074 | 1.000 | |
| BSPS | 0.241 | 0.376 | 0.168 | -0.159 | -0.025 | 0.113 | 0.011 | -0.086 | 0.573 | 1.000 |
| SVINS | 0.310 | 0.217 | -0.243 | -0.269 | -0.175 | 0.069 | 0.183 | 0.019 | 0.234 | 0.057 |
| NSECV | 0.122 | 0.111 | 0.116 | 0.261 | 0.477 | 0.198 | -0.165 | 0.139 | -0.035 | 0.087 |
| PINSW | 0.095 | -0.122 | 0.003 | 0.015 | 0.274 | 0.220 | 0.045 | 0.033 | -0.061 | -0.058 |
| PTLLN | -0.051 | -0.098 | 0.001 | 0.019 | 0.169 | 0.159 | -0.020 | -0.006 | -0.020 | -0.079 |
| INTLN | -0.065 | -0.250 | -0.091 | -0.214 | 0.000 | 0.272 | 0.018 | 0.056 | 0.075 | 0.048 |
| NFLGN | 0.082 | 0.258 | -0.172 | -0.332 | -0.432 | -0.097 | 0.182 | -0.008 | 0.415 | 0.180 |
| CORLLN | 0.004 | 0.097 | -0.222 | -0.242 | -0.150 | 0.099 | 0.203 | -0.087 | 0.287 | 0.129 |
| CORLWD | -0.054 | 0.037 | -0.108 | -0.152 | -0.131 | 0.088 | 0.184 | -0.088 | 0.170 | 0.190 |
| CONVWD | -0.172 | -0.058 | -0.054 | -0.087 | -0.001 | 0.087 | 0.053 | -0.081 | 0.105 | 0.110 |
| STRKLGL | 0.129 | 0.099 | -0.167 | -0.226 | -0.176 | 0.047 | 0.186 | -0.076 | 0.102 | -0.057 |
| STBLN | 0.048 | 0.315 | -0.205 | -0.339 | -0.437 | -0.113 | 0.311 | -0.255 | 0.312 | 0.177 |
| STBWD | -0.006 | -0.002 | -0.027 | -0.152 | -0.159 | -0.010 | 0.239 | -0.108 | 0.134 | 0.159 |
| ACMKLG | 0.001 | 0.112 | 0.051 | -0.110 | -0.289 | -0.166 | 0.065 | -0.108 | 0.234 | 0.263 |
| ACKNW | -0.058 | 0.106 | 0.173 | 0.060 | -0.012 | -0.062 | 0.014 | -0.159 | 0.073 | 0.081 |
| TVPAS | 0.095 | 0.138 | -0.251 | -0.343 | -0.439 | -0.065 | 0.329 | -0.169 | 0.209 | 0.039 |
| CRMNPV | 0.100 | -0.044 | 0.061 | -0.214 | -0.133 | 0.057 | 0.242 | -0.108 | 0.085 | 0.075 |
| CRMNGD | 0.106 | -0.059 | 0.034 | -0.019 | 0.121 | 0.115 | 0.032 | 0.006 | 0.052 | 0.116 |
| ANNOFRB | -0.021 | -0.274 | 0.214 | 0.335 | 0.517 | -0.158 | -0.285 | 0.247 | -0.307 | -0.228 |
| IBLNR | 0.006 | 0.309 | -0.210 | -0.308 | -0.408 | -0.132 | 0.284 | -0.231 | 0.378 | 0.261 |
| OBRNR | 0.079 | 0.219 | -0.176 | -0.189 | -0.269 | -0.126 | 0.097 | -0.048 | 0.198 | 0.194 |
| INVI_2 | 0.001 | 0.167 | -0.016 | 0.030 | -0.023 | -0.047 | 0.022 | -0.010 | 0.007 | -0.060 |
| CRLLWR | 0.028 | 0.081 | -0.163 | -0.157 | -0.079 | 0.077 | 0.115 | -0.019 | 0.181 | 0.062 |
| ACLNR | 0.028 | 0.048 | -0.083 | -0.151 | -0.311 | -0.152 | 0.063 | -0.031 | 0.203 | 0.241 |
| CORLNR | -0.026 | 0.309 | -0.231 | -0.356 | -0.476 | -0.198 | 0.272 | -0.290 | 0.345 | 0.248 |
| STLLOR | -0.050 | 0.268 | -0.145 | -0.316 | -0.486 | -0.155 | 0.293 | -0.286 | 0.356 | 0.325 |
| TFLPLR | -0.003 | -0.282 | 0.237 | 0.360 | 0.383 | 0.026 | -0.301 | 0.310 | -0.311 | -0.171 |
| TNFLNR | 0.046 | 0.095 | 0.109 | 0.083 | 0.058 | -0.032 | -0.089 | -0.020 | -0.010 | -0.049 |
| LRNFHR | 0.065 | 0.285 | -0.254 | -0.398 | -0.497 | -0.075 | 0.305 | -0.249 | 0.398 | 0.281 |



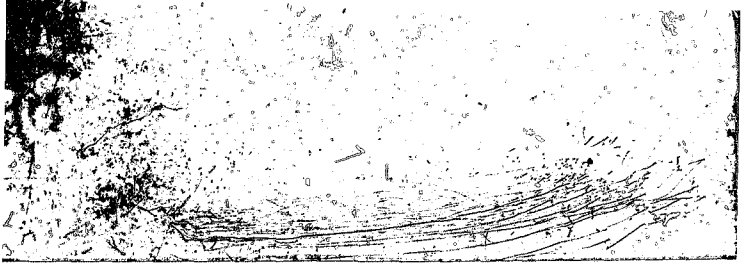


IDENTIFICATION: CHARACTER CORRELATION MATRIX



| | SVINS | NSECV | PINSV | PTLLN | INTLN | NFLOR | CORLLN | CORLHD | CORTHD | STNKLOL |
|---|---|---|---|---|---|---|---|---|---|---|
| SVINS | 1.000 | | | | | | | | | |
| NSECV | 0.211 | 1.000 | | | | | | | | |
| PINSV | -0.135 | -0.080 | 1.000 | | | | | | | |
| PTLLN | -0.127 | 0.096 | -0.428 | 1.000 | | | | | | |
| INTLN | 0.025 | 0.053 | 0.103 | -0.022 | 1.000 | | | | | |
| NFLOR | 0.081 | -0.113 | -0.213 | 0.128 | -0.013 | 1.000 | | | | |
| CORLLN | 0.136 | 0.024 | -0.027 | 0.168 | 0.088 | 0.164 | 1.000 | | | |
| CORLHD | -0.061 | 0.000 | -0.054 | -0.018 | -0.103 | 0.066 | 0.359 | 1.000 | | |
| CORTHD | -0.120 | -0.064 | 0.083 | 0.140 | -0.046 | 0.038 | 0.357 | 0.500 | 1.000 | |
| STNKLOL | 0.100 | -0.063 | -0.003 | 0.087 | -0.060 | 0.215 | 0.342 | 0.105 | 0.090 | 1.000 |
| STBLR | 0.107 | -0.076 | -0.190 | 0.215 | 0.000 | 0.245 | 0.266 | 0.057 | 0.187 | 0.388 |
| STBHD | -0.046 | -0.092 | 0.062 | 0.110 | -0.024 | 0.199 | 0.206 | 0.268 | 0.342 | 0.218 |
| AGWLLN | -0.019 | -0.132 | -0.337 | 0.179 | 0.062 | 0.809 | 0.255 | 0.131 | 0.159 | 0.167 |
| AGWHD | -0.070 | 0.068 | -0.148 | 0.121 | -0.110 | -0.002 | 0.175 | 0.224 | 0.338 | 0.091 |
| RVFWD | 0.043 | 0.301 | -0.144 | 0.171 | -0.037 | 0.477 | 0.198 | 0.257 | 0.094 | 0.332 |
| CRWHWD | 0.053 | -0.103 | 0.084 | 0.033 | 0.063 | 0.141 | 0.261 | 0.431 | 0.306 | 0.316 |
| CRWHWD | -0.049 | 0.068 | 0.167 | -0.128 | 0.196 | -0.106 | 0.123 | 0.353 | 0.226 | 0.114 |
| WWNDTHD | -0.040 | 0.381 | 0.197 | -0.084 | 0.102 | -0.678 | -0.147 | -0.178 | -0.039 | -0.290 |
| JNLWR | 0.092 | -0.256 | -0.229 | 0.263 | -0.065 | 0.642 | 0.385 | 0.065 | 0.058 | 0.301 |
| OBLWR | 0.039 | -0.097 | -0.186 | 0.063 | 0.011 | 0.267 | 0.169 | -0.038 | 0.005 | 0.186 |
| INVLWR | 0.027 | 0.296 | -0.119 | 0.240 | -0.039 | -0.190 | 0.271 | -0.020 | -0.018 | 0.130 |
| CRLLWR | 0.186 | 0.042 | -0.015 | 0.184 | 0.152 | 0.143 | 0.021 | -0.229 | 0.069 | 0.294 |
| ACLWR | 0.015 | -0.211 | -0.284 | 0.111 | 0.083 | 0.439 | 0.176 | -0.027 | -0.009 | 0.102 |
| CORLWR | 0.065 | -0.271 | -0.216 | 0.254 | 0.031 | 0.720 | 0.310 | 0.019 | 0.057 | 0.386 |
| BTLLBR | 0.013 | 0.300 | -0.253 | 0.245 | 0.025 | 0.705 | 0.186 | 0.142 | 0.125 | -0.159 |
| TFLPLR | -0.074 | 0.222 | 0.125 | -0.229 | 0.033 | -0.599 | -0.268 | -0.076 | 0.056 | -0.380 |
| INFLWR | -0.078 | 0.092 | 0.067 | 0.106 | 0.016 | -0.036 | 0.094 | -0.078 | 0.023 | 0.163 |
| LBWFWR | 0.078 | -0.332 | -0.173 | 0.116 | -0.038 | 0.704 | 0.294 | 0.186 | 0.101 | 0.341 |



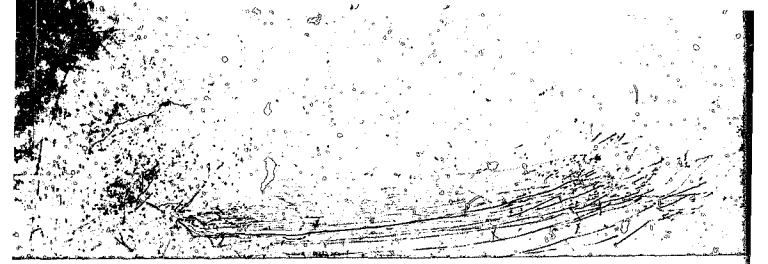


IDENTIFICATION: CHARACTER CORRELATION MATRIX



| | STBLN | STBWD | ACMXL% | ACMKWD | NVPAC | CRMKWD | CRMMWD | NWNDFHD | IBLWR | OBLWR |
|---|---|---|---|---|---|---|---|---|---|---|
| JTBLN | 1.000 | | | | | | | | | |
| STBWD | 0.230 | 1.000 | | | | | | | | |
| ACMXLN | 0.536 | 0.180 | 1.000 | | | | | | | |
| ACMKWD | 0.208 | 0.196 | 0.427 | 1.000 | | | | | | |
| NVPAC | 0.548 | 0.272 | 0.233 | 0.103 | 1.000 | | | | | |
| CRMKWD | 0.262 | 0.516 | 0.179 | 0.326 | 0.317 | 1.000 | | | | |
| CRMMWD | -0.072 | 0.232 | -0.173 | 0.163 | 0.040 | 0.431 | 1.000 | | | |
| NWNDFHD | -0.595 | -0.166 | -0.883 | -0.016 | -0.573 | -0.286 | 0.101 | 1.000 | | |
| IBLWR | 0.621 | 0.156 | 0.466 | 0.011 | 0.471 | 0.034 | -0.192 | -0.581 | 1.000 | |
| OBLWR | 0.541 | 0.010 | 0.264 | -0.118 | 0.193 | -0.104 | -0.072 | -0.161 | 0.466 | 1.000 |
| INVLNR | 0.120 | -0.091 | 0.106 | -0.027 | 0.077 | -0.230 | -0.213 | 0.108 | 0.397 | 0.382 |
| CRLLNR | 0.264 | 0.057 | 0.173 | -0.019 | 0.053 | 0.016 | -0.087 | -0.053 | 0.120 | 0.198 |
| ACLNR | 0.471 | 0.134 | 0.468 | -0.065 | 0.280 | 0.031 | -0.280 | -0.297 | 0.496 | 0.344 |
| CORLNR | 0.723 | 0.133 | 0.456 | 0.007 | 0.560 | -0.018 | -0.237 | -0.673 | 0.799 | 0.407 |
| STLLNR | 0.607 | 0.229 | 0.505 | 0.103 | 0.495 | 0.114 | -0.215 | -0.609 | 0.698 | 0.388 |
| TFLFLR | -0.495 | -0.137 | -0.008 | 0.146 | -0.505 | -0.136 | 0.067 | 0.715 | -0.637 | -0.233 |
| LNFLWR | 0.161 | -0.095 | -0.017 | -0.001 | 0.063 | -0.122 | -0.095 | -0.145 | 0.244 | 0.098 |
| LNFNR | 0.610 | 0.259 | 0.393 | 0.081 | 0.624 | 0.331 | -0.100 | -0.878 | 0.532 | 0.186 |



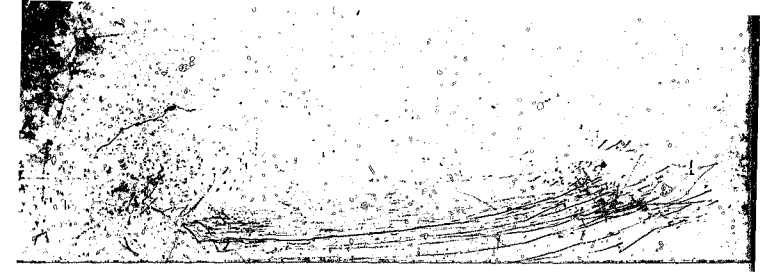


IDENTIFICATION: CHARACTER CORRELATION MATRIX



| | INVLWR | CRLLWR | AGLWR | CORLWR | STLLBR | TFLPLR | INFLWR | LRNFHR |
|---|---|---|---|---|---|---|---|---|
| INVLWR | 1.000 | | | | | | | |
| CRLLWR | 0.299 | 1.000 | | | | | | |
| AGLWR | 0.128 | 0.188 | 1.000 | | | | | |
| CORLWR | 0.229 | 0.116 | 0.485 | 1.000 | | | | |
| STLLBR | 0.100 | 0.110 | 0.896 | 0.721 | 1.000 | | | |
| TFLPLR | -0.188 | -0.231 | -0.076 | -0.698 | -0.514 | 1.000 | | |
| INFLWR | 0.397 | 0.146 | -0.028 | 0.247 | 0.107 | -0.180 | 1.000 | |
| LRNFHR | -0.039 | 0.191 | 0.388 | 0.679 | 0.639 | -0.690 | 0.176 | 1.000 |



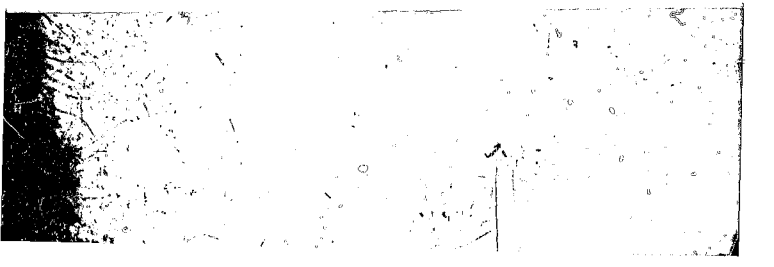


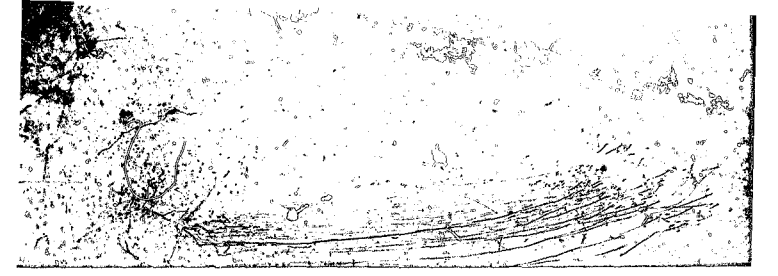
ITERATION NUMBER 1
TRACE = 43.000000

| FACTOR NUMBER | EIGEN VALUE | PERCENT OF TRACE | ACCUM. PERCENT |
|---|---|---|---|
| FACTOR01 | 13.47104 | 28.08 | 28.08 |
| FACTOR02 | 3.59135 | 7.38 | 35.45 |
| FACTOR03 | 3.11205 | 6.48 | 41.94 |

SUMS OF SQUARES OF EACH VARIABLE ACCOUNTED FOR BY FACTORS FROM ITERATION NO. 1

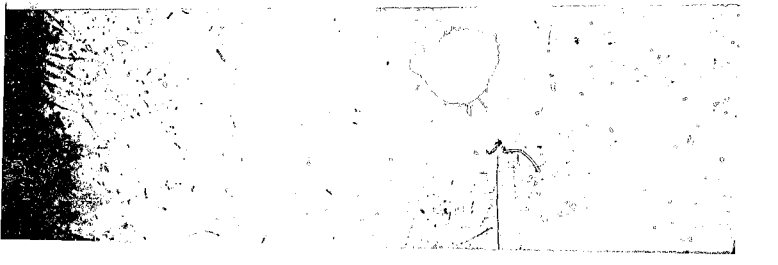
| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 0.1121 | 0.2183 | 0.6628 | 0.6821 | 0.6116 | 0.8079 | 0.4582 | 0.9207 | 0.4358 |
| 0.0790 | 0.2849 | 0.3951 | 0.6036 | 0.4106 | 0.5042 | 0.2116 | 0.4793 | 0.1372 |
| 0.1683 | 0.2301 | 0.1964 | 0.0611 | 0.0791 | 0.6832 | 0.3610 | 0.3086 | 0.1975 |
| 0.8213 | 0.3118 | 0.3700 | 0.1092 | 0.4849 | 0.5979 | 0.3893 | 0.0590 | 0.7805 |
| 0.4346 | 0.3790 | 0.3655 | 0.8225 | 0.6779 | 0.3163 | 0.1102 | 0.7306 | |

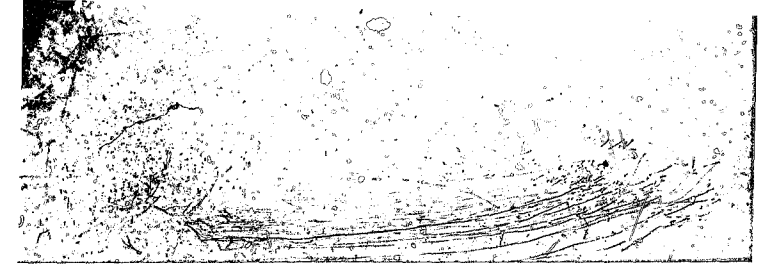




IDENTIFICATION: LIST OF 68 FACTORS AND THEIR CORRESPONDING EIGENVALUES 

| | EIGENVAL |
|---|---|
| FACT0001 | 13.247 |
| FACT0002 | 3.541 |
| FACT0003 | 3.112 |
| FACT0004 | 2.696 |
| FACT0005 | 2.303 |
| FACT0006 | 2.167 |
| FACT0007 | 1.915 |
| FACT0008 | 1.650 |
| FACT0009 | 1.358 |
| FACT0010 | 1.318 |
| FACT0011 | 1.186 |
| FACT0012 | 1.148 |
| FACT0013 | 1.042 |
| FACT0014 | 1.039 |
| FACT0015 | 0.876 |
| FACT0016 | 0.783 |
| FACT0017 | 0.725 |
| FACT0018 | 0.696 |
| FACT0019 | 0.658 |
| FACT0020 | 0.613 |
| FACT0021 | 0.563 |
| FACT0022 | 0.513 |
| FACT0023 | 0.529 |
| FACT0024 | 0.494 |
| FACT0025 | 0.434 |
| FACT0026 | 0.391 |
| FACT0027 | 0.366 |
| FACT0028 | 0.332 |
| FACT0029 | 0.315 |
| FACT0030 | 0.297 |
| FACT0031 | 0.291 |
| FACT0032 | 0.207 |
| FACT0033 | 0.197 |
| FACT0034 | 0.169 |
| FACT0035 | 0.138 |
| FACT0036 | 0.129 |
| FACT0037 | 0.122 |
| FACT0038 | 0.095 |
| FACT0039 | 0.085 |
| FACT0040 | 0.033 |
| FACT0041 | 0.017 |
| FACT0042 | 0.013 |
| FACT0043 | 0.023 |
| FACT0044 | 0.019 |
| FACT0045 | 0.009 |
| FACT0046 | 0.007 |
| FACT0047 | 0.003 |
| FACT0048 | 0.004 |

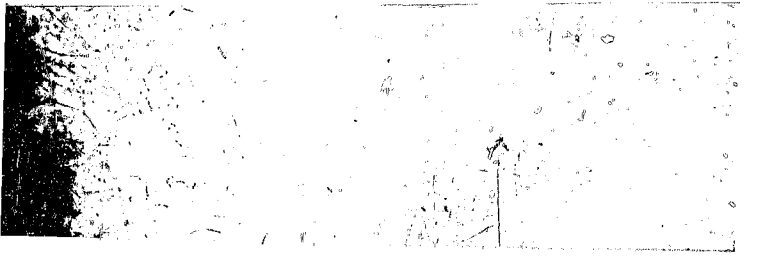


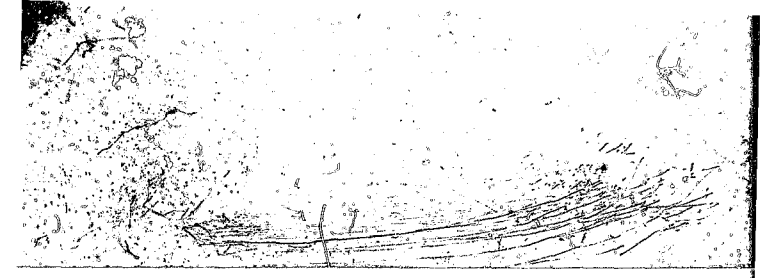


IDENTIFICATION: RELATIVE CONTRIBUTIONS OF THE CHARACTER VARIABLES TO THE PCA



| | FACTOR01 | FACTOR02 | FACTOR03 |
|---|---|---|---|
| RACHLN | 0.029 | -0.283 | 0.177 |
| INNHLN | -0.045 | -E.405 | 0.029 |
| NBR | -0.825 | 0.040 | 0.014 |
| IGNW | -0.281 | -0.477 | -0.350 |
| OGNW | -0.752 | -0.074 | -0.291 |
| LNNON | -0.899 | -0.136 | -0.148 |
| YNKL | -0.796 | 0.119 | -0.081 |
| LDNF | -0.642 | 0.211 | -0.001 |
| INFL | -0.955 | 0.085 | -0.028 |
| INTV | -0.950 | -0.075 | -0.094 |
| VANGS | -0.904 | -0.088 | 0.263 |
| VANGB | -0.340 | 0.047 | 0.328 |
| SHINL | 0.291 | 0.864 | -0.401 |
| LNNDRL | 0.402 | 0.391 | -0.457 |
| NKLNL | 0.621 | -0.058 | 0.148 |
| KNNDL | 0.112 | -0.452 | 0.606 |
| APKAN | -0.395 | -0.316 | 0.149 |
| APXPS | 0.334 | 0.047 | 0.180 |
| BSAN | -0.487 | -0.289 | 0.398 |
| BSPS | -0.343 | -0.099 | 0.107 |
| SVINS | -0.125 | -0.076 | 0.383 |
| NSEGV | 0.365 | 0.040 | 0.309 |
| PINSV | 0.276 | -0.323 | 0.185 |
| PILLN | -0.208 | 0.102 | 0.086 |
| INTLN | 0.027 | -0.136 | 0.294 |
| NFLOR | -0.819 | 0.033 | -0.105 |
| CORILN | -0.366 | -0.231 | 0.199 |
| CORLND | -0.209 | -0.461 | -0.230 |
| CORTND | -0.133 | -0.405 | -0.126 |
| SINKLOL | -0.384 | -0.181 | 0.150 |
| STBLN | -0.786 | 0.030 | 0.017 |
| STBND | -0.317 | -0.413 | -0.159 |
| ACMXLN | -0.574 | 0.158 | -0.125 |
| ACMXVD | -0.138 | -0.229 | -0.316 |
| MVPAC | -0.679 | -0.099 | -0.119 |
| CRMXND | -0.290 | -0.696 | -0.198 |
| CRMMND | 0.105 | -0.574 | -0.097 |
| NWNDFND | 0.783 | -0.043 | 0.202 |
| IBLNR | -0.798 | 0.321 | 0.199 |
| OBLNR | -0.368 | 0.334 | 0.329 |
| IRVLNR | -0.994 | 0.480 | 0.482 |
| ORLLNR | -0.978 | 0.042 | 0.548 |
| ACLNR | -0.542 | 0.293 | 0.015 |
| CORLNR | -0.662 | 0.259 | 0.116 |
| STLLBR | -0.796 | 0.172 | -0.121 |
| TYLPLR | 0.715 | -0.047 | -0.099 |
| INFLNR | -0.706 | 0.276 | 0.130 |
| LRNFNR | -0.849 | -0.058 | -0.076 |



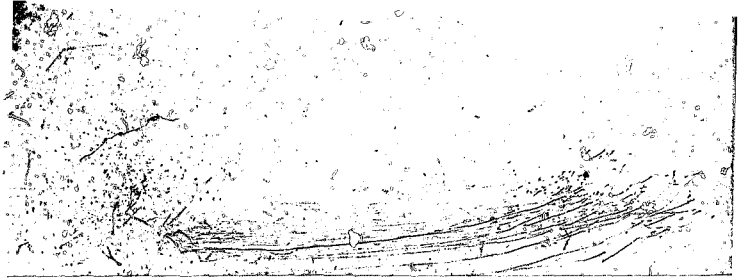


IDENTIFICATION: VALUES OF PCA COORDINATES FOR OTUS



| | OTU 039 | OTU 042 | OTU 043 | OTU 045 | OTU 047 | OTU 049 | OTU 050 | OTU 053 | OTU 054 | OTU 057 |
|---|---|---|---|---|---|---|---|---|---|---|
| FACTOR01 | 0.776 | -0.226 | 0.370 | -0.560 | -0.281 | -0.388 | -0.209 | -0.390 | -0.200 | -0.249 |
| FACTOR02 | 0.161 | -0.439 | 0.503 | -0.635 | -0.251 | 0.091 | -0.141 | -0.163 | -0.606 | 0.022 |
| FACTOR03 | 0.697 | -0.529 | 0.217 | 0.306 | 0.163 | 0.308 | -0.140 | 0.203 | -0.287 | -0.068 |
| | OTU 059 | OTU 060 | OTU 061 | OTU 064 | OTU 066 | OTU 068 | OTU 070 | OTU 071 | OTU 076 | OTU 077 |
| FACTOR01 | -0.366 | -0.356 | -0.821 | -0.098 | -0.305 | -0.071 | 0.211 | -0.268 | 0.256 | 0.328 |
| FACTOR02 | -0.232 | 0.156 | 0.427 | -0.123 | -0.696 | -0.181 | 0.717 | -0.095 | 0.099 | 0.593 |
| FACTOR03 | 0.069 | 0.263 | 0.180 | 0.168 | 0.039 | 0.155 | 0.515 | 0.497 | 0.163 | -0.071 |
| | OTU 078 | OTU 080 | OTU 083 | OTU 085 | OTU 086 | OTU 088 | OTU 090 | OTU 091 | OTU 093 | OTU 094 |
| FACTOR01 | 0.086 | 0.395 | -0.116 | -0.006 | -0.201 | 0.039 | 0.478 | 0.575 | -0.549 | 0.609 |
| FACTOR02 | 0.214 | 0.323 | -0.263 | -0.135 | 0.239 | 0.740 | 0.158 | -0.805 | -0.341 | -0.009 |
| FACTOR03 | -0.001 | .320 | 0.370 | 0.084 | -0.075 | 0.112 | 0.067 | 0.390 | 0.232 | 0.431 |
| | OTU 097 | OTU 100 | OTU 102 | OTU 104 | OTU 106 | OTU 108 | OTU 110 | OTU 112 | OTU 114 | OTU 115 |
| FACTOR01 | 0.906 | -0.037 | 0.842 | -0.380 | -0.662 | -0.112 | -0.393 | -0.580 | -0.508 | -0.065 |
| FACTOR02 | 0.304 | -0.329 | -0.143 | 0.869 | -0.172 | 0.377 | -0.808 | -0.529 | -0.096 | 0.164 |
| FACTOR03 | -0.078 | 0.201 | 0.213 | 0.287 | 0.035 | 0.451 | 0.001 | 0.229 | -0.110 | -0.843 |
| | OTU 116 | OTU 119 | OTU 122 | OTU 125 | OTU 127 | OTU 129 | OTU 130 | OTU 132 | OTU 135 | OTU 136 |
| FACTOR01 | 0.281 | 0.840 | 0.813 | 0.667 | | -0.136 | -0.265 | 0.173 | -0.699 | -0.267 |
| FACTOR02 | 0.288 | -0.110 | 0.310 | 0.490 | | -0.004 | 0.004 | -0.182 | -0.055 | 0.068 |
| FACTOR03 | 0.234 | 0.182 | 0.683 | 0.5[illegible] | | -0.084 | -0.138 | -0.161 | 0.057 | -0.236 |
| | OTU 138 | OTU 140 | OTU 143 | OTU 145 | | OTU 149 | OTU 151 | OTU 154 | OTU 153 | OTU 155 |
| FACTOR01 | -0.724 | -0.077 | -0.233 | -0.686 | ...648 | 0.130 | -0.849 | -0.106 | 0.080 | -0.324 |
| FACTOR02 | 0.446 | 0.083 | 0.489 | -0.059 | -0.033 | -0.025 | 0.031 | 0.489 | 0.833 | -0.921 |
| FACTOR03 | -0.293 | -0.065 | -0.109 | -0.311 | 0.004 | -0.255 | -0.226 | 0.773 | 0.327 | -0.088 |
| | OTU 158 | OTU 159 | OTU 162 | OTU 165 | OTU 166 | OTU 167 | OTU 171 | OTU 177 | OTU 181 | OTU 183 |
| FACTOR01 | 0.260 | -0.099 | -0.182 | 0.067 | -0.195 | -0.313 | -0.337 | -0.121 | 0.095 | -0.088 |
| FACTOR02 | 0.261 | 0.369 | -0.185 | 0.975 | 0.828 | 0.671 | -0.206 | -0.293 | 0.347 | 0.073 |
| FACTOR03 | -0.257 | 0.867 | -0.515 | -0.088 | -0.202 | -0.112 | 0.039 | 0.921 | 0.218 | 0.287 |
| | OTU 186 | OTU 187 | OTU 189 | OTU 191 | OTU 194 | OTU 196 | OTU 197 | OTU 199 | OTU 200 | OTU 202 |
| FACTOR01 | 0.038 | -0.076 | 0.055 | -0.005 | -0.016 | 0.082 | -0.092 | -0.884 | -0.157 | -0.217 |
| FACTOR02 | 0.900 | -0.011 | 0.391 | -0.199 | 0.189 | -0.162 | -0.065 | -0.169 | -0.153 | -0.001 |
| FACTOR03 | -0.036 | -0.18 | 0.065 | -0.135 | -0.101 | -0.098 | 0.020 | -0.046 | -0.526 | 0.920 |

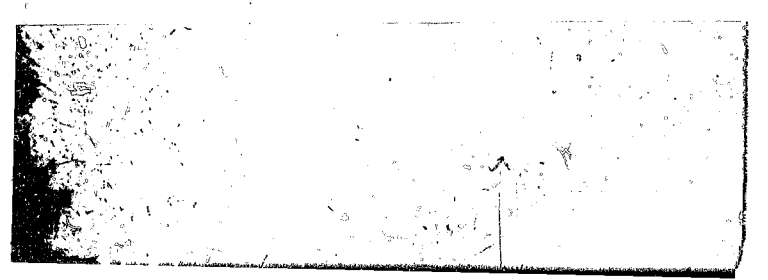




IDENTIFICATION: VALUES OF PCA COORDINATES FOR OTUS



| | OTU 206 | OTU 209 | OTU 210 | OTU 212 | OTU 213 | OTU 216 | OTU 218 | OTU 220 | OTU 227 | OTU 229 |
|---|---|---|---|---|---|---|---|---|---|---|
| FACTOR01 | 0.087 | -0.159 | -0.038 | 0.106 | 0.679 | 0.822 | 0.870 | -0.819 | -0.406 | -0.386 |
| FACTOR02 | 0.199 | -0.533 | -0.609 | 0.206 | -0.091 | 0.276 | -0.015 | 0.358 | 0.693 | 0.165 |
| FACTOR03 | -0.143 | 0.089 | -0.085 | -0.349 | 0.713 | 0.015 | 0.159 | -0.328 | -0.122 | -0.118 |
| | OTU 231 | OTU 234 | OTU 235 | OTU 236 | OTU 239 | OTU 241 | OTU 243 | OTU 244 | OTU 247 | OTU 251 |
| FACTOR01 | -0.571 | -0.968 | -0.645 | -0.815 | -0.720 | -0.735 | -0.564 | -0.761 | -0.761 | -0.725 |
| FACTOR02 | 0.271 | 0.101 | 0.053 | -0.038 | -0.227 | -0.601 | 0.282 | 0.235 | -0.059 | 0.120 |
| FACTOR03 | -0.062 | 0.120 | -0.068 | 0.216 | -0.231 | 0.389 | -0.096 | 0.111 | -0.150 | -0.097 |
| | OTU 252 | OTU 255 | OTU 256 | OTU 259 | OTU 260 | OTU 262 | OTU 264 | OTU 266 | OTU 268 | OTU 270 |
| FACTOR01 | -0.611 | -0.563 | -0.515 | -0.685 | -0.632 | -0.809 | -0.287 | -0.468 | -0.540 | -0.345 |
| FACTOR02 | 0.078 | 0.306 | 0.255 | -0.225 | -0.019 | -0.176 | 0.078 | 0.166 | 0.193 | -0.167 |
| FACTOR03 | -0.068 | -0.093 | -0.087 | 0.313 | 0.117 | 0.138 | -0.077 | 0.104 | 0.115 | 0.210 |
| | OTU 272 | OTU 273 | OTU 276 | OTU 278 | OTU 280 | OTU 282 | OTU 283 | OTU 286 | OTU 288 | OTU 289 |
| FACTOR01 | -0.441 | -0.611 | -0.527 | -0.633 | -0.429 | -0.560 | -0.668 | -0.721 | -0.587 | -0.475 |
| FACTOR02 | -0.012 | 0.238 | 0.279 | -0.120 | 0.138 | -0.490 | 0.332 | 0.039 | 0.193 | -0.144 |
| FACTOR03 | -0.050 | -0.263 | -0.151 | -0.399 | 0.152 | -0.157 | -0.014 | 0.028 | -0.126 | 0.050 |
| | OTU 292 | OTU 295 | OTU 296 | OTU 297 | OTU 298 | OTU 301 | OTU 305 | OTU 306 | OTU 308 | OTU 310 |
| FACTOR01 | -0.082 | -0.323 | 0.613 | 0.617 | 0.828 | 0.839 | 0.889 | 0.892 | 0.861 | 0.892 |
| FACTOR02 | 0.128 | 0.238 | -0.527 | -0.336 | -0.268 | 0.120 | 0.065 | 0.099 | -0.208 | -0.141 |
| FACTOR03 | -0.194 | -0.286 | -0.415 | -0.371 | 0.258 | 0.079 | -0.218 | -0.295 | -0.256 | -0.348 |
| | OTU 311 | OTU 313 | OTU 314 | OTU 316 | OTU 322 | OTU 324 | OTU 326 | OTU 327 | OTU 330 | OTU 332 |
| FACTOR01 | 0.650 | 0.906 | 0.492 | 0.575 | 0.632 | 0.613 | 0.697 | 0.428 | 0.692 | 0.718 |
| FACTOR02 | 0.022 | -0.357 | -0.251 | -0.153 | 0.103 | -0.132 | -0.261 | 0.062 | -0.383 | -0.062 |
| FACTOR03 | -0.035 | -0.268 | -0.489 | -0.047 | 0.018 | 0.149 | -0.087 | -0.200 | 0.076 | 0.315 |
| | OTU 333 | OTU 336 | OTU 337 | OTU 339 | OTU 340 | OTU 341 | OTU 342 | OTU 343 | OTU 344 | OTU 345 |
| FACTOR01 | 0.717 | 0.896 | 0.879 | 0.857 | 0.775 | 0.695 | 0.756 | 0.922 | 1.000 | 0.832 |
| FACTOR02 | -0.281 | -0.092 | -0.118 | -0.268 | 0.076 | -0.027 | -0.130 | -0.077 | 0.000 | 0.065 |
| FACTOR03 | -0.309 | -0.224 | -0.113 | -0.106 | 0.311 | -0.248 | -0.330 | -0.232 | -0.566 | 0.051 |



APPENDIX VB

Summary of Principal Components Analysis
for 138 Male OTUs

IDENTIFICATION: CHARACTER CORRELATION MATRIX



| | RACMLEN | INTNDLN | LNWDRL | MXLNL | MXWDL | APXAN | APXPS | BSAN | BSPS | SVINS |
|---|---|---|---|---|---|---|---|---|---|---|
| RACMLEN | 1.000 | | | | | | | | | |
| INTNDLN | 0.623 | 1.000 | | | | | | | | |
| LNWDRL | 0.120 | 0.045 | 1.000 | | | | | | | |
| MXLNL | 0.216 | 0.114 | 0.435 | 1.000 | | | | | | |
| MXWDL | 0.097 | 0.071 | -0.571 | 0.634 | 1.000 | | | | | |
| APXAN | -0.090 | -0.064 | -0.469 | -0.760 | 0.114 | 1.000 | | | | |
| APXPS | -0.104 | -0.129 | 0.039 | 0.128 | -0.090 | -0.414 | 1.000 | | | |
| BSAN | -0.138 | 0.017 | -0.494 | -0.196 | 0.273 | 0.000 | 0.166 | 1.000 | | |
| BSPS | -0.093 | -0.047 | 0.032 | 0.120 | 0.274 | -0.200 | 0.570 | 1.000 | 1.000 | |
| SVINS | -0.002 | -0.127 | -0.292 | 0.044 | 0.333 | -0.131 | -0.095 | 0.050 | -0.067 | 1.000 |
| NSECV | 0.036 | -0.143 | 0.192 | 0.523 | 0.366 | -0.131 | -0.072 | 0.037 | 0.172 | 0.233 |
| PINSV | -0.013 | 0.007 | 0.137 | 0.308 | 0.169 | -0.072 | -0.121 | -0.034 | -0.146 | -0.049 |
| PTLLN | 0.097 | 0.225 | 0.286 | 0.362 | 0.120 | -0.215 | 0.011 | -0.066 | -0.113 | -0.071 |
| INTLN | 0.220 | 0.100 | -0.045 | 0.204 | 0.258 | 0.066 | -0.107 | 0.000 | 0.000 | 0.035 |
| NBR | -0.046 | 0.160 | -0.292 | -0.404 | -0.153 | 0.202 | 0.039 | 0.000 | 0.000 | 0.065 |
| IBRL | -0.046 | 0.108 | -0.208 | -0.358 | -0.168 | 0.068 | 0.124 | 0.328 | 0.000 | 0.102 |
| OBRL | -0.036 | 0.180 | -0.171 | -0.389 | -0.142 | 0.096 | 0.108 | 0.252 | 0.000 | 0.141 |
| IBRW | -0.007 | 0.139 | -0.256 | -0.231 | 0.001 | 0.052 | 0.156 | 0.228 | 0.000 | 0.111 |
| OBRW | 0.005 | 0.251 | -0.130 | -0.179 | -0.061 | 0.070 | 0.089 | 0.204 | 0.162 | -0.192 |
| PMXL | 0.000 | 0.152 | -0.269 | -0.306 | -0.072 | 0.239 | -0.031 | 0.127 | 0.084 | -0.068 |
| LBRP | 0.037 | 0.178 | -0.132 | -0.179 | -0.064 | 0.063 | -0.840 | 0.171 | 0.160 | -0.055 |
| NFLOR | -0.018 | 0.158 | -0.133 | -0.343 | -0.236 | 0.129 | 0.080 | 0.214 | 0.279 | -0.148 |
| CORLLN | -0.165 | 0.037 | -0.159 | -0.221 | -0.056 | 0.073 | 0.056 | 0.019 | 0.061 | -0.106 |
| CORLWD | 0.004 | 0.151 | -0.122 | -0.084 | 0.119 | 0.010 | 0.032 | 0.072 | 0.030 | -0.085 |
| CORTWD | -0.163 | 0.026 | -0.228 | -0.289 | -0.089 | 0.038 | 0.093 | 0.228 | 0.119 | -0.087 |
| LCTPFA | -0.052 | 0.104 | -0.179 | -0.259 | -0.104 | 0.089 | 0.101 | 0.117 | 0.147 | -0.099 |
| INFW | 0.025 | 0.139 | -0.130 | -0.270 | -0.165 | 0.134 | 0.109 | 0.152 | 0.182 | -0.213 |
| INFL | -0.006 | 0.137 | -0.216 | -0.327 | -0.138 | 0.114 | 0.043 | 0.224 | 0.228 | -0.102 |
| FMXLN | -0.116 | 0.125 | -0.207 | -0.269 | -0.079 | 0.124 | 0.018 | 0.116 | 0.075 | -0.155 |
| AMXLN | -0.040 | 0.035 | -0.210 | -0.208 | -0.021 | 0.109 | 0.086 | 0.202 | 0.243 | -0.023 |
| STRXLOL | 0.024 | 0.242 | -0.180 | -0.069 | 0.117 | 0.021 | 0.055 | 0.073 | -0.035 | 0.026 |
| VACMXLN | 0.000 | -0.109 | 0.104 | -0.075 | -0.158 | 0.009 | 0.030 | 0.089 | 0.040 | -0.017 |
| CRMXWD | -0.067 | 0.105 | -0.193 | -0.211 | -0.044 | -0.021 | 0.104 | 0.270 | 0.176 | -0.111 |
| CRMNWD | -0.004 | 0.015 | -0.110 | -0.020 | 0.080 | -0.047 | 0.139 | 0.169 | 0.165 | -0.010 |
| VANGS | 0.153 | 0.125 | -0.244 | 0.110 | 0.342 | 0.223 | -0.136 | 0.184 | 0.058 | 0.440 |
| VANGB | -0.228 | -0.090 | -0.285 | -0.043 | 0.222 | 0.051 | -0.042 | 0.266 | 0.256 | 0.108 |
| SHINL | 0.032 | 0.037 | 0.818 | 0.370 | -0.370 | -0.326 | -0.081 | -0.251 | 0.266 | -0.271 |
| NWNOFHD | 0.395 | 0.044 | 0.222 | 0.399 | 0.204 | -0.193 | -0.117 | -0.272 | -0.208 | 0.163 |
| IBLWR | -0.068 | 0.043 | -0.100 | -0.314 | -0.250 | 0.084 | 0.022 | 0.247 | 0.314 | -0.054 |
| OBLWR | -0.094 | -0.132 | -0.143 | -0.277 | -0.161 | 0.106 | 0.004 | 0.089 | 0.105 | 0.187 |
| INVLWR | -0.134 | -0.168 | 0.018 | 0.106 | 0.092 | 0.021 | -0.199 | -0.125 | -0.083 | 0.126 |
| CRLLWR | -0.156 | -0.046 | -0.073 | -0.189 | -0.131 | 0.069 | 0.020 | -0.046 | 0.030 | -0.149 |
| CORLWR | -0.019 | -0.007 | -0.036 | -0.094 | -0.058 | 0.121 | 0.014 | -0.094 | 0.027 | -0.022 |
| CORLMWR | -0.071 | 0.055 | -0.106 | -0.257 | -0.167 | 0.121 | 0.010 | 0.006 | 0.036 | -0.095 |
| STLLBR | 0.019 | -0.100 | -0.013 | -0.145 | -0.162 | 0.074 | 0.022 | 0.101 | 0.189 | -0.069 |
| TFLPLR | 0.052 | -0.150 | 0.199 | 0.345 | 0.192 | -0.094 | -0.138 | -0.242 | -0.190 | 0.062 |
| INFLWR | -0.075 | -0.141 | -0.021 | 0.104 | 0.127 | -0.097 | -0.170 | -0.107 | -0.123 | 0.233 |
| LRNFHR | -0.121 | 0.109 | -0.156 | -0.315 | -0.178 | 0.138 | 0.056 | 0.223 | 0.204 | -0.168 |
| ALFMLR | 0.172 | -0.061 | 0.123 | 0.259 | 0.137 | -0.088 | 0.024 | 0.014 | 0.074 | 0.187 |
| LCPFCLR | 0.002 | 0.066 | -0.077 | -0.131 | -0.068 | 0.072 | 0.054 | 0.037 | 0.066 | -0.015 |

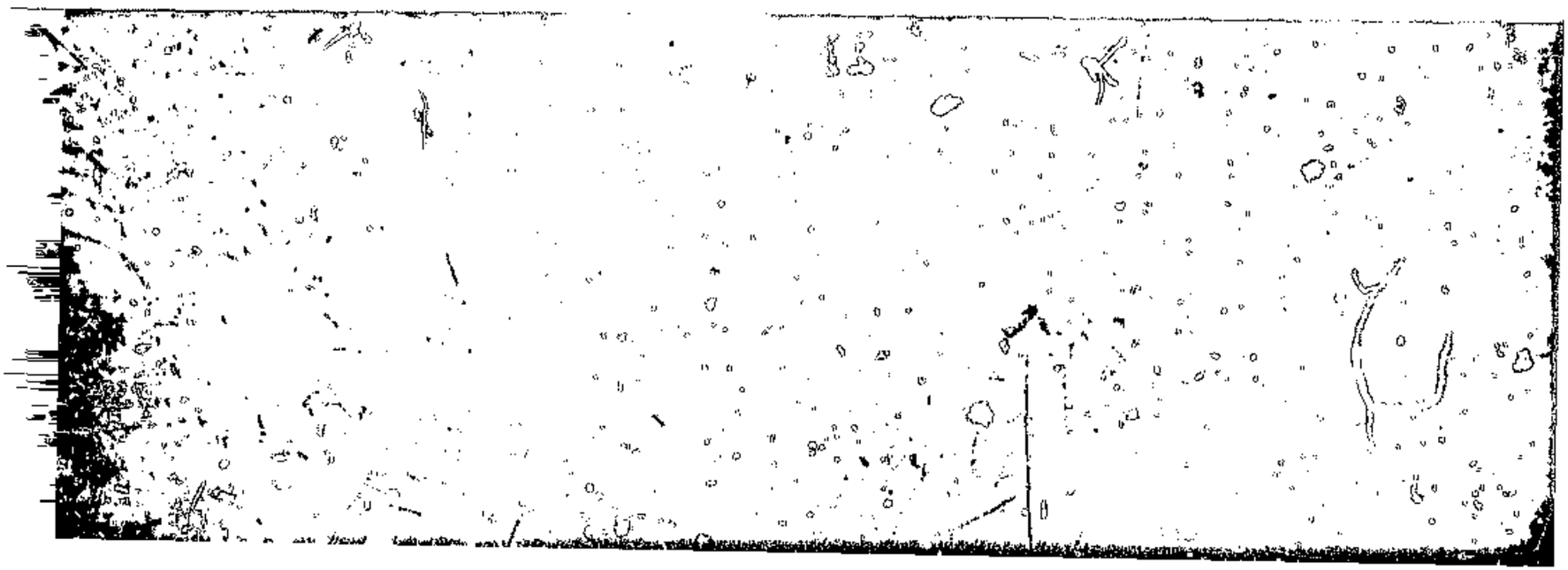
| | NSECV | PINSV | PTLLN | INTLN | NBR | IBRL | OBRL | IBRW | OBRW | PMXL |
|---|---|---|---|---|---|---|---|---|---|---|
| NSECV | 1.000 | | | | | | | | | |
| PINSV | 0.308 | 1.000 | | | | | | | | |
| PTLLN | 0.362 | 0.120 | 1.000 | | | | | | | |
| INTLN | 0.258 | 0.066 | -0.215 | 1.000 | | | | | | |
| NBR | -0.404 | -0.153 | 0.202 | 0.039 | 1.000 | | | | | |
| IBRL | -0.358 | -0.168 | 0.068 | 0.124 | 0.328 | 1.000 | | | | |
| OBRL | -0.389 | -0.142 | 0.096 | 0.108 | 0.252 | 0.000 | 1.000 | | | |
| IBRW | -0.231 | 0.001 | 0.052 | 0.156 | 0.228 | 0.000 | 0.000 | 1.000 | | |
| OBRW | -0.179 | -0.061 | 0.070 | 0.089 | 0.204 | 0.162 | 0.000 | 0.000 | 1.000 | |
| PMXL | -0.306 | -0.072 | 0.239 | -0.031 | 0.127 | 0.084 | 0.000 | 0.000 | 0.000 | 1.000 |
| LBRP | -0.179 | -0.064 | 0.063 | -0.840 | 0.171 | 0.160 | 0.000 | 0.000 | 0.000 | 0.000 |
| NFLOR | -0.343 | -0.236 | 0.129 | 0.080 | 0.214 | 0.279 | 0.000 | 0.000 | 0.000 | 0.000 |
| CORLLN | -0.221 | -0.056 | 0.073 | 0.056 | 0.019 | 0.061 | 0.000 | 0.000 | 0.000 | 0.000 |
| CORLWD | -0.084 | 0.119 | 0.010 | 0.032 | 0.072 | 0.030 | 0.000 | 0.000 | 0.000 | 0.000 |
| CORTWD | -0.289 | -0.089 | 0.038 | 0.093 | 0.228 | 0.119 | 0.000 | 0.000 | 0.000 | 0.000 |
| LCTPFA | -0.259 | -0.104 | 0.089 | 0.101 | 0.117 | 0.147 | 0.000 | 0.000 | 0.000 | 0.000 |
| INFW | -0.270 | -0.165 | 0.134 | 0.109 | 0.152 | 0.182 | 0.000 | 0.000 | 0.000 | 0.000 |
| INFL | -0.327 | -0.138 | 0.114 | 0.043 | 0.224 | 0.228 | 0.000 | 0.000 | 0.000 | 0.000 |
| FMXLN | -0.269 | -0.079 | 0.124 | 0.018 | 0.116 | 0.075 | 0.000 | 0.000 | 0.000 | 0.000 |
| AMXLN | -0.208 | -0.021 | 0.109 | 0.086 | 0.202 | 0.243 | 0.000 | 0.000 | 0.000 | 0.000 |
| STRXLOL | -0.069 | 0.117 | 0.021 | 0.055 | 0.073 | -0.035 | 0.000 | 0.000 | 0.000 | 0.000 |
| VACMXLN | -0.075 | -0.158 | 0.009 | 0.030 | 0.089 | 0.040 | 0.000 | 0.000 | 0.000 | 0.000 |
| CRMXWD | -0.211 | -0.044 | -0.021 | 0.104 | 0.270 | 0.176 | 0.000 | 0.000 | 0.000 | 0.000 |
| CRMNWD | -0.020 | 0.080 | -0.047 | 0.139 | 0.169 | 0.165 | 0.000 | 0.000 | 0.000 | 0.000 |
| VANGS | 0.110 | 0.342 | 0.223 | -0.136 | 0.184 | 0.058 | 0.000 | 0.000 | 0.000 | 0.000 |
| VANGB | -0.043 | 0.222 | 0.051 | -0.042 | 0.266 | 0.256 | 0.000 | 0.000 | 0.000 | 0.000 |
| SHINL | 0.370 | -0.370 | -0.326 | -0.081 | -0.251 | 0.266 | 0.000 | 0.000 | 0.000 | 0.000 |
| NWNOFHD | 0.399 | 0.204 | -0.193 | -0.117 | -0.272 | -0.208 | 0.000 | 0.000 | 0.000 | 0.000 |
| IBLWR | -0.314 | -0.250 | 0.084 | 0.022 | 0.247 | 0.314 | 0.000 | 0.000 | 0.000 | 0.000 |
| OBLWR | -0.277 | -0.161 | 0.106 | 0.004 | 0.089 | 0.105 | 0.000 | 0.000 | 0.000 | 0.000 |
| INVLWR | 0.106 | 0.092 | 0.021 | -0.199 | -0.125 | -0.083 | 0.000 | 0.000 | 0.000 | 0.000 |
| CRLLWR | -0.189 | -0.131 | 0.069 | 0.020 | -0.046 | 0.030 | 0.000 | 0.000 | 0.000 | 0.000 |
| CORLWR | -0.094 | -0.058 | 0.121 | 0.014 | -0.094 | 0.027 | 0.000 | 0.000 | 0.000 | 0.000 |
| CORLMWR | -0.257 | -0.167 | 0.121 | 0.010 | 0.006 | 0.036 | 0.000 | 0.000 | 0.000 | 0.000 |
| STLLBR | -0.145 | -0.162 | 0.074 | 0.022 | 0.101 | 0.189 | 0.000 | 0.000 | 0.000 | 0.000 |
| TFLPLR | 0.345 | 0.192 | -0.094 | -0.138 | -0.242 | -0.190 | 0.000 | 0.000 | 0.000 | 0.000 |
| INFLWR | 0.104 | 0.127 | -0.097 | -0.170 | -0.107 | -0.123 | 0.000 | 0.000 | 0.000 | 0.000 |
| LRNFHR | -0.315 | -0.178 | 0.138 | 0.056 | 0.223 | 0.204 | 0.000 | 0.000 | 0.000 | 0.000 |
| ALFMLR | 0.259 | 0.137 | -0.088 | 0.024 | 0.014 | 0.074 | 0.000 | 0.000 | 0.000 | 0.000 |
| LCPFCLR | -0.131 | -0.068 | 0.072 | 0.054 | 0.037 | 0.066 | 0.000 | 0.000 | 0.000 | 0.000 |

| | LBRP | NFLOR | CORLLN | CORLWD | CORTWD | LCTPFA | INFW | INFL | FMXLN | AMXLN |
|---|---|---|---|---|---|---|---|---|---|---|
| LBRP | 1.000 | | | | | | | | | |
| NFLOR | 0.000 | 1.000 | | | | | | | | |
| CORLLN | 0.000 | 0.000 | 1.000 | | | | | | | |
| CORLWD | 0.000 | 0.000 | 0.000 | 1.000 | | | | | | |
| CORTWD | 0.000 | 0.000 | 0.000 | 0.000 | 1.000 | | | | | |
| LCTPFA | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.000 | | | | |
| INFW | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.000 | | | |
| INFL | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.000 | | |
| FMXLN | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.000 | |
| AMXLN | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.000 |
| STRXLOL | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| VACMXLN | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| CRMXWD | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| CRMNWD | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| VANGS | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| VANGB | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| SHINL | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| NWNOFHD | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| IBLWR | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| OBLWR | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| INVLWR | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| CRLLWR | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| CORLWR | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| CORLMWR | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| STLLBR | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| TFLPLR | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| INFLWR | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| LRNFHR | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| ALFMLR | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| LCPFCLR | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

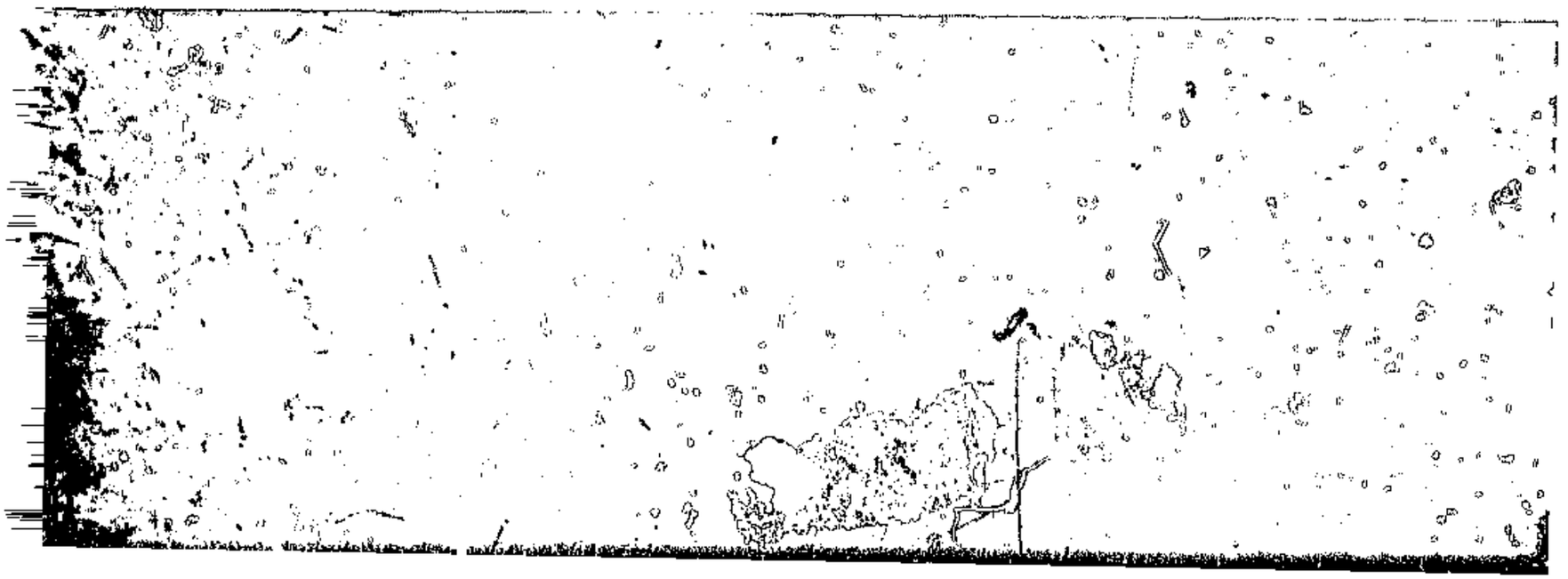
| | STRXLOL | VACMXLN | CRMXWD | CRMNWD | VANGS | VANGB | SHINL | NWNOFHD | IBLWR | OBLWR |
|---|---|---|---|---|---|---|---|---|---|---|
| STRXLOL | 1.000 | | | | | | | | | |
| VACMXLN | 0.000 | 1.000 | | | | | | | | |
| CRMXWD | 0.000 | 0.000 | 1.000 | | | | | | | |
| CRMNWD | 0.000 | 0.000 | 0.000 | 1.000 | | | | | | |
| VANGS | 0.000 | 0.000 | 0.000 | 0.000 | 1.000 | | | | | |
| VANGB | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.000 | | | | |
| SHINL | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.000 | | | |
| NWNOFHD | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.000 | | |
| IBLWR | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.000 | |
| OBLWR | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.000 |
| INVLWR | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| CRLLWR | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| CORLWR | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| CORLMWR | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| STLLBR | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| TFLPLR | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| INFLWR | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| LRNFHR | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| ALFMLR | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| LCPFCLR | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

| | INVLWR | CRLLWR | CORLWR | CORLMWR | STLLBR | TFLPLR | INFLWR | LRNFHR | ALFMLR | LCPFCLR |
|---|---|---|---|---|---|---|---|---|---|---|
| INVLWR | 1.000 | | | | | | | | | |
| CRLLWR | 0.000 | 1.000 | | | | | | | | |
| CORLWR | 0.000 | 0.000 | 1.000 | | | | | | | |
| CORLMWR | 0.000 | 0.000 | 0.000 | 1.000 | | | | | | |
| STLLBR | 0.000 | 0.000 | 0.000 | 0.000 | 1.000 | | | | | |
| TFLPLR | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.000 | | | | |
| INFLWR | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.000 | | | |
| LRNFHR | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.000 | | |
| ALFMLR | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.000 | |
| LCPFCLR | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.000 |

| | NSECV | PINSV | PTLLN | INTLN | NBR | IBRL | OBRL | IBRW | OBRW | PMXL |
|---|---|---|---|---|---|---|---|---|---|---|
| NSECV | 1.000 | | | | | | | | | |
| PINSV | 0.053 | 1.000 | | | | | | | | |
| PTLLN | 0.236 | -0.048 | 1.000 | | | | | | | |
| INTLN | 0.011 | 0.125 | -0.097 | 1.000 | | | | | | |
| NBR | -0.173 | -0.320 | 0.232 | 0.019 | 1.000 | | | | | |
| IBRL | -0.134 | -0.317 | 0.222 | 0.056 | 0.849 | 1.000 | | | | |
| OBRL | -0.155 | -0.320 | 0.232 | 0.062 | 0.810 | 0.886 | 1.000 | | | |
| IBRW | -0.098 | -0.140 | 0.023 | 0.165 | 0.568 | 0.639 | 0.574 | 1.000 | | |
| OBRW | -0.136 | -0.264 | 0.255 | 0.061 | 0.741 | 0.786 | 0.886 | 0.623 | 1.000 | |
| PMXL | -0.123 | -0.300 | 0.213 | 0.056 | 0.860 | 0.766 | 0.807 | 0.552 | 0.725 | 1.000 |
| CORP | -0.027 | -0.287 | 0.271 | 0.090 | 0.683 | 0.729 | 0.675 | 0.520 | 0.610 | 0.727 |
| HFLDR | -0.192 | -0.285 | 0.239 | 0.010 | 0.817 | 0.825 | 0.843 | 0.525 | 0.748 | 0.772 |
| CORLLN | -0.058 | -0.263 | 0.193 | -0.060 | 0.598 | 0.534 | 0.566 | 0.355 | 0.544 | 0.652 |
| CORLWD | -0.098 | 0.084 | 0.187 | 0.138 | 0.265 | 0.179 | 0.176 | 0.260 | 0.229 | 0.217 |
| CORTWD | -0.073 | -0.186 | 0.200 | 0.131 | 0.589 | 0.670 | 0.642 | 0.602 | 0.571 | 0.607 |
| LCTPFA | -0.120 | -0.250 | 0.165 | -0.001 | 0.735 | 0.759 | 0.740 | 0.469 | 0.672 | 0.707 |
| INFW | -0.246 | -0.276 | 0.166 | 0.093 | 0.695 | 0.728 | 0.785 | 0.477 | 0.740 | 0.743 |
| INFL | -0.124 | -0.301 | 0.204 | 0.077 | 0.839 | 0.899 | 0.844 | 0.621 | 0.758 | 0.830 |
| FMXLN | -0.167 | -0.237 | 0.167 | 0.040 | 0.645 | 0.602 | 0.639 | 0.367 | 0.601 | 0.642 |
| AMXLN | 0.013 | -0.330 | 0.185 | 0.116 | 0.690 | 0.745 | 0.700 | 0.501 | 0.616 | 0.713 |
| STMXLOL | -0.050 | 0.016 | 0.077 | 0.051 | 0.418 | 0.253 | 0.275 | 0.408 | 0.260 | 0.333 |
| VACMXLN | 0.022 | -0.065 | -0.121 | 0.222 | 0.037 | 0.299 | 0.226 | 0.245 | 0.156 | 0.069 |
| CRMXWD | -0.037 | -0.212 | 0.289 | 0.135 | 0.560 | 0.670 | 0.611 | 0.646 | 0.561 | 0.609 |
| CRMNWD | 0.064 | 0.024 | 0.157 | 0.149 | 0.239 | 0.349 | 0.250 | 0.389 | 0.227 | 0.241 |
| VANGS | 0.240 | 0.090 | -0.117 | 0.095 | -0.015 | -0.051 | -0.080 | -0.047 | -0.073 | 0.010 |
| VANGB | 0.150 | 0.016 | 0.114 | -0.051 | 0.275 | 0.235 | 0.252 | 0.140 | 0.220 | 0.254 |
| SHINL | 0.191 | 0.092 | 0.281 | -0.094 | -0.222 | -0.086 | -0.097 | -0.226 | -0.099 | -0.236 |
| NMNOFHD | 0.233 | 0.263 | -0.133 | 0.033 | -0.759 | -0.797 | -0.821 | -0.539 | -0.741 | -0.751 |
| IBLWR | -0.127 | -0.309 | 0.264 | -0.039 | 0.711 | 0.826 | 0.749 | 0.113 | 0.590 | 0.624 |
| OBLWR | -0.069 | -0.123 | -0.010 | -0.025 | 0.231 | 0.261 | 0.294 | -0.097 | -0.160 | 0.226 |
| INVLWR | 0.164 | 0.113 | -0.045 | -0.127 | -0.113 | -0.184 | -0.321 | -0.279 | -0.357 | -0.167 |
| CRLLWR | -0.008 | -0.295 | 0.086 | -0.129 | 0.430 | 0.412 | 0.442 | 0.199 | 0.396 | 0.503 |
| CORLWR | -0.074 | -0.084 | -0.078 | -0.112 | 0.262 | 0.198 | 0.245 | -0.068 | 0.232 | 0.225 |
| CORLMAR | -0.170 | -0.268 | 0.070 | -0.060 | 0.556 | 0.499 | 0.550 | 0.238 | 0.514 | 0.542 |
| STLLBR | -0.022 | -0.169 | 0.079 | 0.075 | 0.151 | 0.336 | 0.347 | 0.026 | 0.291 | 0.225 |
| TFLPLR | 0.226 | 0.334 | -0.165 | 0.093 | -0.762 | -0.819 | -0.805 | -0.588 | -0.760 | -0.714 |
| INFLWR | 0.259 | 0.101 | -0.050 | -0.092 | -0.255 | -0.317 | -0.437 | -0.270 | -0.478 | -0.302 |
| LRNFHR | -0.168 | -0.258 | 0.190 | -0.019 | 0.758 | 0.804 | 0.800 | 0.526 | 0.709 | 0.782 |
| ALFMLR | 0.269 | 0.092 | -0.038 | 0.037 | -0.334 | -0.246 | -0.328 | -0.091 | -0.315 | -0.294 |
| LCPFCLR | -0.147 | -0.048 | -0.039 | -0.047 | 0.256 | 0.270 | 0.266 | 0.080 | 0.239 | 0.190 |



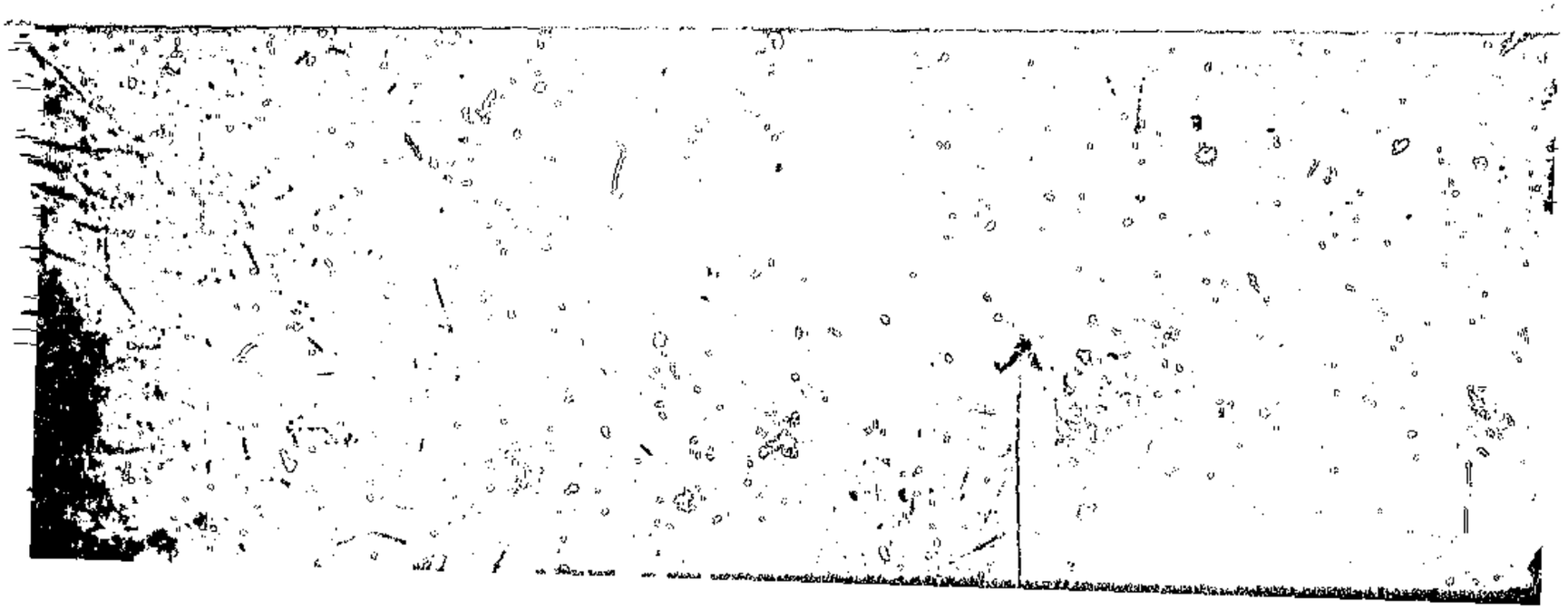
| | LBRP | NFLOR | CORLLN | CORLWD | CORTWD | LCTPFA | INFW | INFL | FMXLN | AMXLN |
|---|---|---|---|---|---|---|---|---|---|---|
| LBRP | 1.000 | | | | | | | | | |
| NFLOR | 0.663 | 1.000 | | | | | | | | |
| CORLLN | 0.511 | 0.463 | 1.000 | | | | | | | |
| CORLWD | 0.221 | 0.138 | 0.174 | 1.000 | | | | | | |
| CORTWD | 0.602 | 0.569 | 0.477 | 0.381 | 1.000 | | | | | |
| LCTPFA | 0.566 | 0.659 | 0.675 | 0.144 | 0.442 | 1.000 | | | | |
| INFW | 0.631 | 0.811 | 0.534 | 0.173 | 0.489 | 0.769 | 1.000 | | | |
| INFL | 0.716 | 0.822 | 0.620 | 0.197 | 0.601 | 0.863 | 0.827 | 1.000 | | |
| FMXLN | 0.514 | 0.536 | 0.727 | 0.253 | 0.445 | 0.737 | 0.670 | 0.678 | 1.000 | |
| AMXLN | 0.656 | 0.653 | 0.727 | 0.112 | 0.534 | 0.757 | 0.724 | 0.830 | 0.646 | 1.000 |
| STMXLDL | 0.273 | 0.134 | 0.367 | 0.283 | 0.134 | 0.216 | 0.069 | 0.271 | 0.266 | 0.287 |
| VACMXLN | 0.107 | 0.211 | -0.012 | -0.203 | 0.218 | 0.185 | 0.302 | 0.256 | 0.057 | 0.247 |
| CRMXWD | 0.632 | 0.517 | 0.433 | 0.370 | 0.865 | 0.349 | 0.400 | 0.587 | 0.369 | 0.510 |
| CRMNWD | 0.257 | 0.185 | 0.139 | 0.452 | 0.548 | 0.060 | 0.087 | 0.234 | 0.006 | 0.184 |
| VANGS | -0.053 | -0.106 | -0.009 | 0.061 | -0.111 | -0.001 | -0.098 | -0.014 | -0.036 | -0.036 |
| VANGB | 0.190 | 0.194 | 0.284 | 0.182 | 0.176 | 0.238 | 0.172 | 0.289 | 0.241 | 0.262 |
| SHTNL | -0.098 | -0.026 | -0.213 | -0.141 | -0.192 | -0.158 | -0.100 | -0.138 | -0.204 | -0.167 |
| PMNOFHD | -0.631 | -0.789 | -0.573 | -0.165 | -0.643 | -0.702 | -0.791 | -0.775 | -0.649 | -0.642 |
| TBLWR | 0.561 | 0.706 | 0.442 | 0.068 | 0.443 | 0.645 | 0.622 | 0.714 | 0.530 | 0.592 |
| OBLWR | 0.168 | 0.247 | 0.120 | -0.039 | 0.180 | 0.188 | 0.117 | 0.232 | 0.166 | 0.220 |
| INALWR | -0.142 | -0.390 | 0.034 | -0.069 | -0.199 | -0.133 | -0.495 | -0.168 | -0.121 | -0.090 |
| CRLLWR | 0.367 | 0.368 | 0.850 | -0.358 | 0.258 | 0.551 | 0.398 | 0.472 | 0.541 | 0.615 |
| CORLWR | 0.065 | 0.217 | 0.804 | -0.159 | -0.276 | 0.617 | 0.414 | 0.346 | 0.459 | 0.572 |
| CORLMWR | 0.399 | 0.501 | 0.604 | -0.113 | 0.139 | 0.781 | 0.632 | 0.641 | 0.700 | 0.655 |
| STLLBR | 0.219 | 0.398 | 0.094 | -0.099 | 0.197 | 0.404 | 0.503 | 0.392 | 0.237 | 0.339 |
| TFLPLR | -0.675 | -0.743 | -0.429 | -0.161 | -0.594 | -0.563 | -0.653 | -0.699 | -0.582 | -0.569 |
| INFLWR | -0.245 | -0.447 | -0.110 | -0.077 | -0.202 | -0.331 | -0.707 | -0.319 | -0.298 | -0.288 |
| LRNFHR | 0.630 | 0.762 | 0.633 | 0.124 | 0.617 | 0.729 | 0.737 | 0.817 | 0.645 | 0.705 |
| ALFMLR | -0.142 | -0.236 | -0.403 | -0.256 | -0.178 | -0.433 | -0.370 | -0.287 | -0.802 | -0.120 |
| LCPFCLR | 0.073 | 0.287 | 0.066 | -0.005 | -0.025 | 0.657 | 0.427 | 0.383 | 0.269 | 0.188 |



IDENTIFICATION: CHARACTER CORRELATION MATRIX



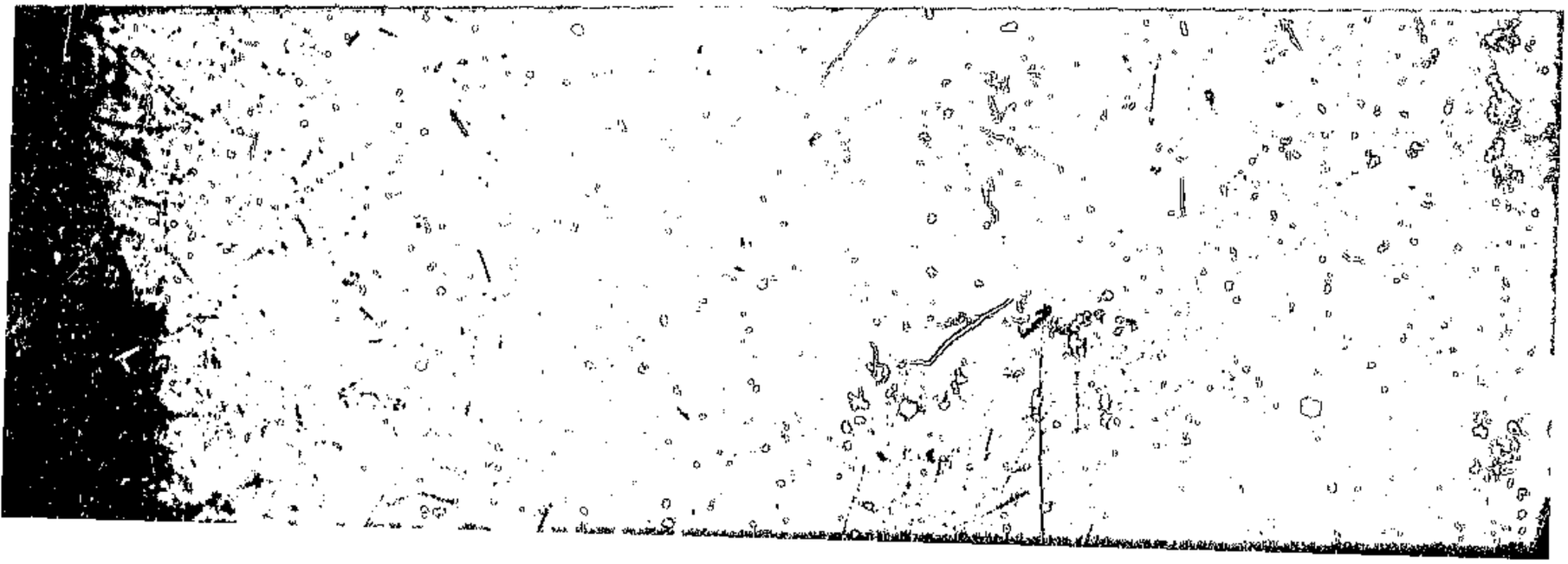
| | STMXLOL | VACMXLN | CRMXWD | CRMNWD | VANGS | VANGB | SHINL | NWNOFHD | IBLWR | OBLWR |
|---|---|---|---|---|---|---|---|---|---|---|
| STMXLOL | 1.000 | | | | | | | | | |
| VACMXLN | -0.233 | 1.000 | | | | | | | | |
| CRMXWD | 0.308 | 0.126 | 1.000 | | | | | | | |
| CRMNWD | 0.299 | 0.032 | 0.590 | 1.000 | | | | | | |
| VANGS | 0.075 | -0.065 | -0.115 | -0.039 | 1.000 | | | | | |
| VANGB | 0.176 | -0.183 | 0.146 | 0.087 | 0.221 | 1.000 | | | | |
| SHINL | -0.205 | 0.085 | -0.140 | -0.021 | -0.223 | -0.141 | 1.000 | | | |
| NWNOFHD | -0.166 | -0.268 | -0.556 | -0.208 | 0.119 | -0.273 | 0.115 | 1.000 | | |
| IBLWR | 0.054 | 0.198 | 0.400 | 0.176 | -0.041 | 0.235 | 0.038 | -0.674 | 1.000 | |
| OBLWR | 0.003 | 0.094 | 0.139 | 0.069 | -0.002 | 0.082 | -0.079 | -0.201 | 0.397 | 1.000 |
| INVLWR | 0.145 | -0.359 | -0.159 | -0.048 | 0.066 | 0.113 | -0.016 | 0.364 | -0.073 | 0.131 |
| CRLLWR | 0.194 | 0.085 | 0.218 | -0.086 | -0.049 | 0.169 | -0.114 | -0.452 | 0.388 | 0.127 |
| CORLWR | 0.066 | 0.048 | -0.452 | -0.381 | 0.081 | 0.154 | -0.057 | -0.243 | 0.310 | 0.065 |
| CORLMWR | 0.113 | 0.128 | 0.071 | -0.490 | -0.009 | 0.210 | -0.146 | -0.527 | 0.477 | 0.124 |
| STLLBR | -0.699 | 0.364 | 0.049 | -0.170 | -0.059 | 0.006 | 0.077 | -0.336 | 0.400 | 0.076 |
| TPLPLR | -0.300 | -0.120 | -0.622 | -0.300 | 0.119 | -0.200 | 0.085 | 0.742 | -0.662 | -0.136 |
| INFLWR | 0.132 | -0.338 | -0.116 | 0.046 | 0.073 | 0.060 | -0.030 | 0.514 | -0.260 | 0.141 |
| LRNFIR | 0.213 | 0.225 | 0.554 | 0.215 | -0.073 | 0.211 | -0.071 | -0.869 | 0.668 | 0.221 |
| ALFMLR | -0.073 | 0.051 | -0.067 | 0.124 | 0.036 | -0.105 | 0.143 | 0.393 | -0.283 | -0.109 |
| LCPFCLR | -0.144 | 0.156 | -0.152 | -0.221 | 0.027 | -0.012 | -0.050 | -0.293 | 0.294 | 0.099 |



IDENTIFICATION: CHARACTER CORRELATION MATRIX



| | INVLWR | CRLLWR | CORLWR | CORLMWR | STLLBR | TFLPLR | INFLWR | LENFHR | ALFMLR | LOPFCLR |
|---|---|---|---|---|---|---|---|---|---|---|
| INVLWR | 1.000 | | | | | | | | | |
| CRLLWR | 0.070 | 1.000 | | | | | | | | |
| CORLWR | 0.005 | 0.456 | 1.000 | | | | | | | |
| CORLMWR | -0.089 | 0.616 | 0.704 | 1.000 | | | | | | |
| STLLBR | -0.304 | 0.136 | 0.261 | 0.366 | 1.000 | | | | | |
| TFLPLR | 0.309 | -0.322 | -0.087 | -0.392 | -0.162 | 1.000 | | | | |
| INFLWR | 0.790 | -0.051 | -0.217 | -0.307 | -0.376 | 0.408 | 1.000 | | | |
| LENFHR | -0.208 | 0.531 | 0.268 | 0.536 | 0.315 | -0.650 | -0.341 | 1.000 | | |
| ALFMLR | 0.105 | -0.243 | -0.364 | -0.448 | -0.125 | 0.209 | 0.231 | -0.314 | 1.000 | |
| LOPFCLR | -0.166 | 0.043 | 0.560 | 0.462 | 0.418 | -0.102 | -0.303 | 0.283 | -0.306 | 1.000 |

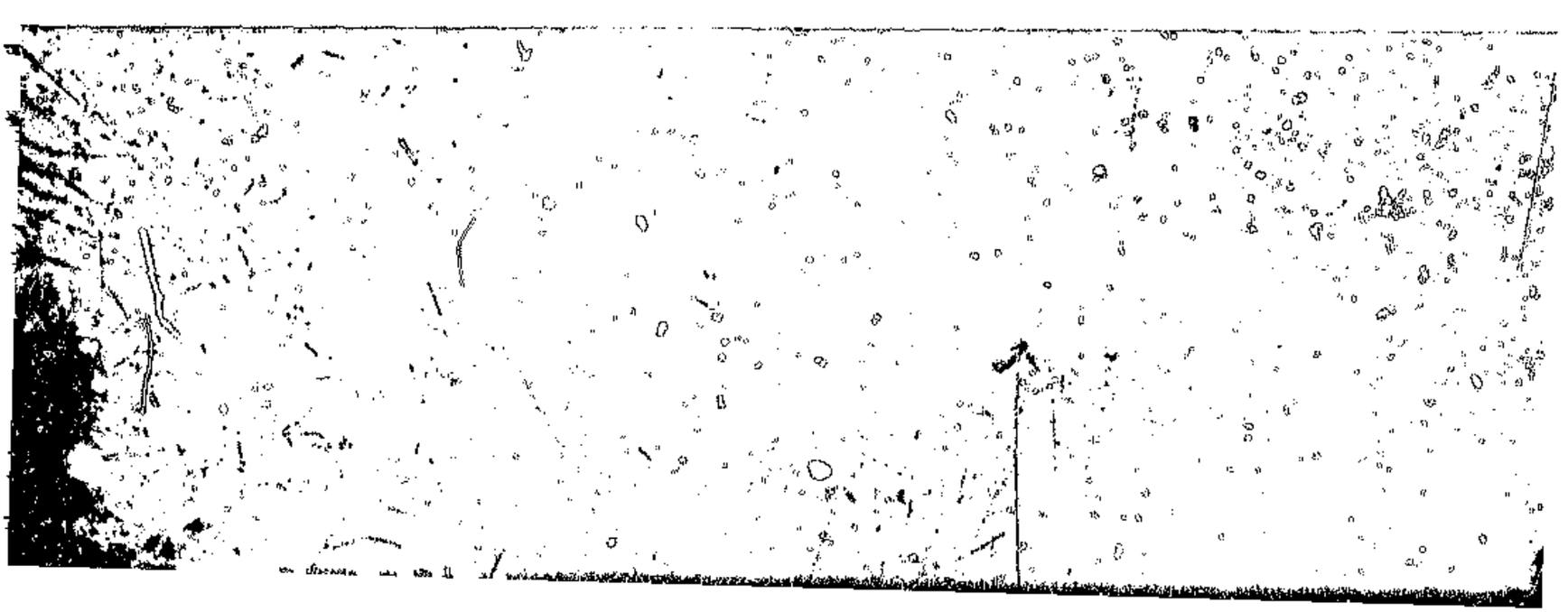


ITERATION NUMBER 1
TRACE = 50.000000

| FACTOR NUMBER | EIGEN VALUE | PERCENT OF TRACE | ACCUM. PERCENT |
|---|---|---|---|
| FACT0001 | 16.05530 | 32.11 | 32.11 |
| FACT0002 | 4.15330 | 8.31 | 40.42 |
| FACT0003 | 3.51095 | 7.02 | 47.44 |

SUMS OF SQUARES OF EACH VARIABLE ACCOUNTED FOR BY FACTORS FROM ITERATION NO. 1

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 0.0559 | 0.0577 | 0.5909 | 0.2490 | 0.2811 | 0.2499 | 0.0605 | 0.1743 | 0.1167 | 0.2507 |
| 0.0802 | 0.1379 | 0.1824 | 0.0554 | 0.8183 | 0.8751 | 0.8673 | 0.5463 | 0.7420 | 0.7907 |
| 0.6232 | 0.7871 | 0.5789 | 0.2702 | 0.6985 | 0.8165 | 0.8304 | 0.8728 | 0.6689 | 0.6830 |
| 0.3706 | 0.1986 | 0.8222 | 0.0199 | 0.1917 | 0.2290 | 0.5216 | 0.7974 | 0.5924 | 0.0919 |
| 0.3145 | 0.4391 | 0.7010 | 0.2043 | 0.4160 | 0.7046 | 0.4359 | 0.7666 | 0.3019 | 0.3886 |

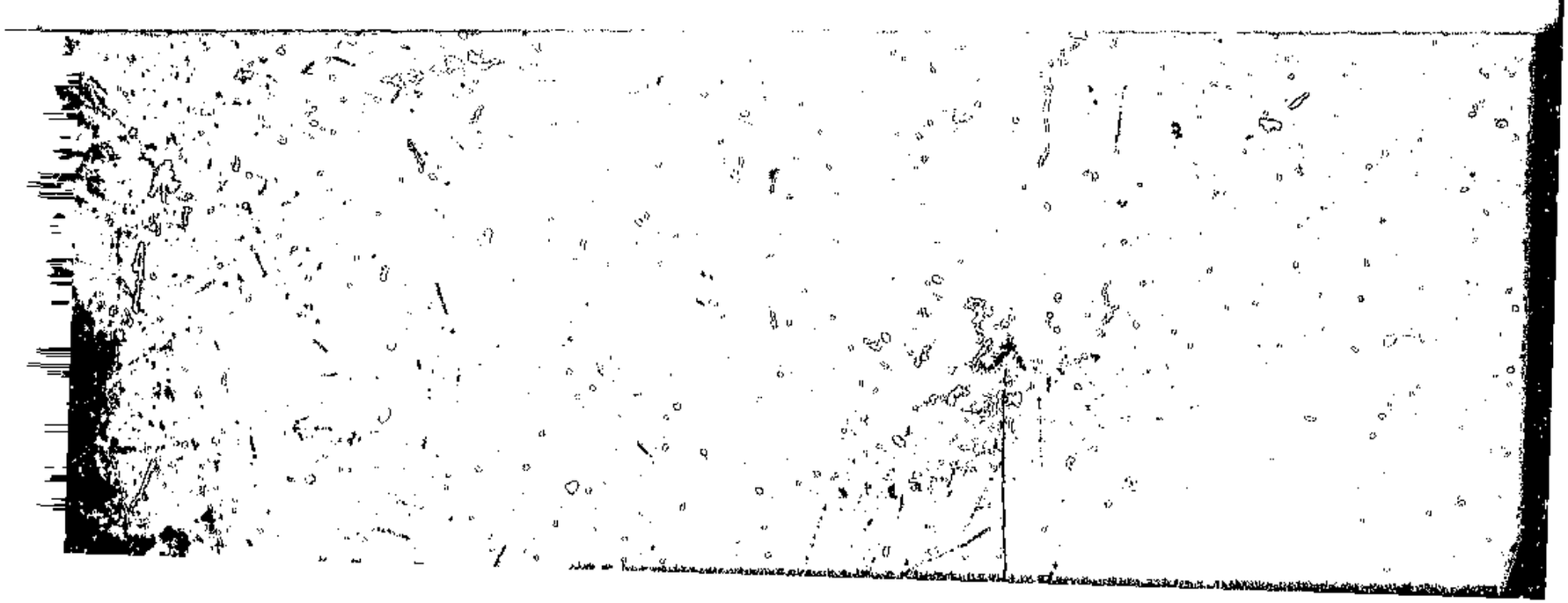


IDENTIFICATION: LIST OF 50 FACTORS AND THEIR CORRESPONDING EIGENVALUES 

| | EIGENVAL |
|---|---|
| FACT0001 | 13.055 |
| FACT0002 | 6.153 |
| FACT0003 | 5.511 |
| FACT0004 | 2.789 |
| FACT0005 | 2.611 |
| FACT0006 | 2.410 |
| FACT0007 | 1.860 |
| FACT0008 | 1.620 |
| FACT0009 | 1.473 |
| FACT0010 | 1.268 |
| FACT0011 | 1.155 |
| FACT0012 | 1.084 |
| FACT0013 | 0.949 |
| FACT0014 | 0.844 |
| FACT0015 | 0.740 |
| FACT0016 | 0.755 |
| FACT0017 | 0.691 |
| FACT0018 | 0.598 |
| FACT0019 | 0.582 |
| FACT0020 | 0.517 |
| FACT0021 | 0.458 |
| FACT0022 | 0.379 |
| FACT0023 | 0.408 |
| FACT0024 | 0.407 |
| FACT0025 | 0.326 |
| FACT0026 | 0.291 |
| FACT0027 | 0.269 |
| FACT0028 | 0.239 |
| FACT0029 | 0.218 |
| FACT0030 | 0.183 |
| FACT0031 | 0.165 |
| FACT0032 | 0.137 |
| FACT0033 | 0.149 |
| FACT0034 | 0.153 |
| FACT0035 | 0.107 |
| FACT0036 | 0.080 |
| FACT0037 | 0.084 |
| FACT0038 | 0.069 |
| FACT0039 | 0.051 |
| FACT0040 | 0.036 |
| FACT0041 | 0.029 |
| FACT0042 | 0.027 |
| FACT0043 | 0.020 |
| FACT0044 | 0.015 |
| FACT0045 | 0.008 |
| FACT0046 | 0.003 |
| FACT0047 | 0.00, |
| FACT0048 | 0.005 |
| FACT0049 | 0.004 |
| FACT0050 | 0.006 |



| | FACTOR01 | FACTOR02 | FACTOR03 |
|---|---|---|---|
| RACHLEN | 0.093 | -0.048 | 0.212 |
| INTNDLN | -0.131 | -0.120 | 0.162 |
| LNWDRL | 0.260 | 0.241 | 0.682 |
| MXLNL | 0.394 | -0.133 | 0.276 |
| MXWDL | 0.170 | -0.368 | -0.342 |
| APIAN | -0.150 | 0.046 | -0.475 |
| APXPS | -0.096 | -0.059 | 0.218 |
| BGAN | -0.259 | -0.302 | -0.128 |
| BSPS | -0.224 | -0.130 | 0.222 |
| SVINS | 0.143 | -0.175 | -0.447 |
| NSECV | 0.200 | -0.199 | 0.026 |
| PINSV | 0.353 | -0.106 | 0.048 |
| PTLLN | -0.214 | -0.173 | 0.326 |
| INTLN | -0.041 | -0.217 | 0.083 |
| NBR | -0.689 | -0.111 | -0.126 |
| IBRL | -0.922 | -0.125 | 0.095 |
| OBRL | -0.923 | -0.042 | 0.114 |
| IBRW | -0.626 | -0.386 | 0.077 |
| OBRW | -0.843 | -0.074 | 0.162 |
| PMXL | -0.876 | -0.109 | -0.107 |
| LBRP | -0.755 | -0.219 | 0.070 |
| NFLOR | -0.867 | 0.016 | 0.186 |
| CORLLN | -0.705 | 0.046 | -0.280 |
| CORLWD | -0.219 | -0.471 | -0.021 |
| CORTWD | -0.687 | -0.457 | 0.133 |
| LCTOFA | -0.853 | 0.271 | -0.122 |
| INFW | -0.869 | 0.214 | 0.172 |
| INFL | -0.934 | 0.002 | -0.009 |
| PMXLN | -0.768 | 0.186 | -0.212 |
| AMXLN | -0.820 | -0.003 | -0.099 |
| STMXLOL | -0.273 | -0.438 | -0.324 |
| VACMXLN | -0.227 | 0.172 | 0.343 |
| CRMKWD | -0.637 | -0.621 | 0.175 |
| CRMNWD | -0.235 | -0.730 | 0.100 |
| VANGS | 0.070 | -0.122 | -0.415 |
| VANGN | -0.281 | -0.370 | -0.348 |
| SHINL | 0.183 | 0.188 | 0.673 |
| NWNOFHD | 0.091 | -0.033 | -0.051 |
| IBLWR | -0.759 | 0.116 | 0.059 |
| OBLWR | -0.228 | 0.039 | -0.196 |
| INT[illegible] | 0.290 | -0.087 | -0.472 |
| CR[illegible] | -0.548 | 0.282 | -0.244 |
| CORLW[illegible] | -0.329 | 0.707 | -0.306 |
| CORLA | -0.658 | 0.565 | -0.229 |
| STLI[illegible] | -0.367 | 0.454 | 0.274 |
| TC[illegible] | 0.809 | 0.181 | -0.129 |
| INFLWR | 0.445 | -0.258 | -0.414 |
| LRNFHR | -0.875 | 0.016 | 0.037 |
| ALFNLR | 0.404 | -0.313 | 0.201 |
| LCPFCLR | -0.329 | 0.528 | -0.035 |



IDENTIFICATION: VALUES OF PCA COORDINATES FOR OTUS



| | OTU 040 | OTU 041 | OTU 044 | OTU 048 | OTU 055 | OTU 056 | OTU 062 | OTU 063 | OTU 065 | OTU 069 |
|---|---|---|---|---|---|---|---|---|---|---|
| FACTOR01 | -0.302 | -0.048 | -0.197 | -0.481 | -0.330 | -0.159 | -0.146 | -0.155 | -0.053 | -0.028 |
| FACTOR02 | -1.266 | -0.625 | -0.464 | -0.321 | -0.178 | -0.636 | 0.035 | -0.140 | 0.215 | -0.127 |
| FACTOR03 | 0.138 | 0.384 | -0.081 | -0.370 | -0.313 | -0.441 | -0.216 | -0.229 | -0.174 | 0.245 |

| | OTU 072 | OTU 073 | OTU 074 | OTU 075 | OTU 079 | OTU 081 | OTU 082 | OTU 084 | OTU 087 | OTU 089 |
|---|---|---|---|---|---|---|---|---|---|---|
| FACTOR01 | -0.546 | -0.423 | 0.143 | -0.032 | 0.263 | 0.255 | -0.260 | -0.237 | -0.375 | 0.150 |
| FACTOR02 | -0.092 | -0.229 | 0.066 | 0.041 | 0.049 | -0.085 | 0.256 | -0.255 | -0.311 | -0.333 |
| FACTOR03 | 0.086 | 0.417 | -0.003 | 0.030 | -0.153 | 0.111 | -0.052 | -0.027 | -0.023 | -0.298 |

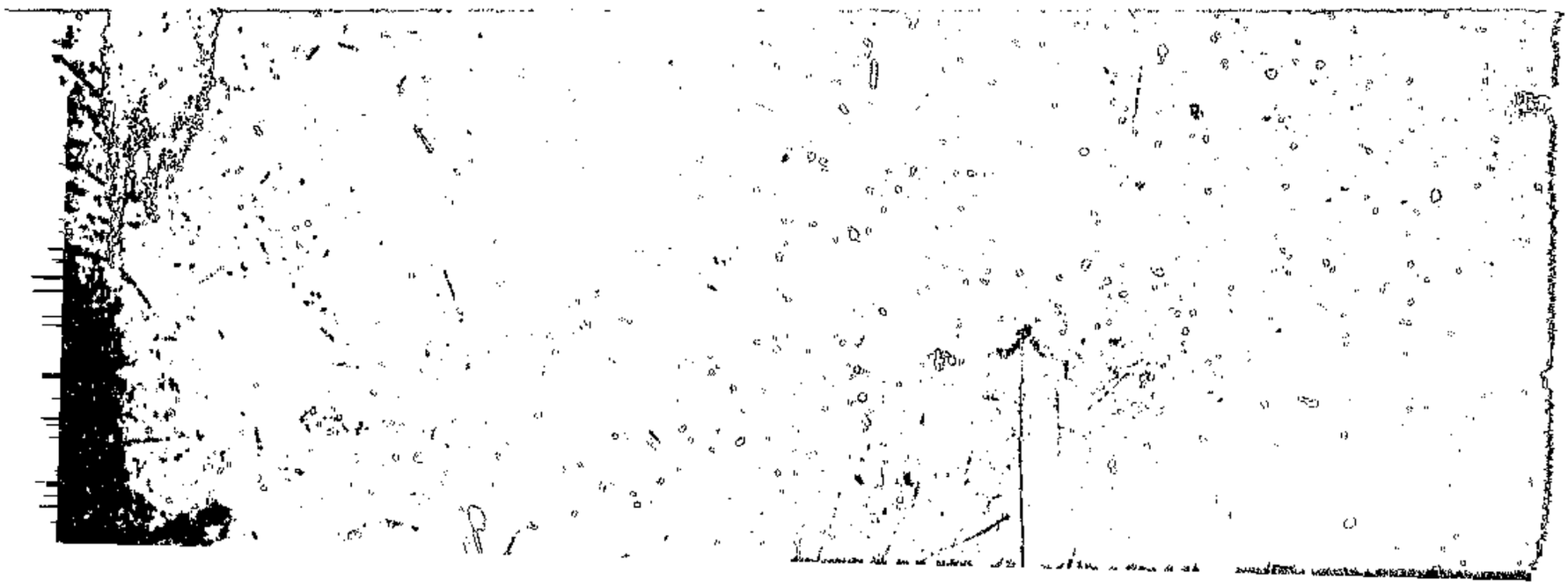
| | OTU 092 | OTU 095 | OTU 096 | OTU 098 | OTU 099 | OTU 101 | OTU 103 | OTU 105 | OTU 107 | OTU 109 |
|---|---|---|---|---|---|---|---|---|---|---|
| FACTOR01 | -0.621 | 1.092 | 1.192 | 1.197 | -0.103 | 0.960 | -0.547 | -0.495 | -0.408 | -0.909 |
| FACTOR02 | 0.010 | -0.250 | 0.062 | -0.052 | -0.009 | -0.034 | 0.155 | -0.229 | -0.395 | -0.825 |
| FACTOR03 | 0.157 | -0.551 | -0.415 | 0.127 | -0.368 | -0.624 | -0.139 | -0.043 | -0.217 | -0.127 |

| | OTU 111 | OTU 113 | OTU 117 | OTU 118 | OTU 120 | OTU 121 | OTU 123 | OTU 124 | OTU 126 | OTU 128 |
|---|---|---|---|---|---|---|---|---|---|---|
| FACTOR01 | -0.538 | -0.622 | -0.443 | -0.477 | 1.015 | 1.065 | 1.208 | 1.009 | 0.529 | -0.279 |
| FACTOR02 | -0.129 | -0.113 | -0.339 | 0.012 | -0.323 | -0.269 | 0.086 | -0.049 | 0.309 | 0.546 |
| FACTOR03 | -0.335 | -0.434 | -0.401 | -0.058 | -0.378 | -0.656 | -0.753 | -0.578 | -0.002 | -0.320 |

| | OTU 131 | OTU 133 | OTU 134 | OTU 137 | OTU 139 | OTU 141 | OTU 142 | OTU 144 | OTU 146 | OTU 148 |
|---|---|---|---|---|---|---|---|---|---|---|
| 001 | -0.439 | 0.051 | -0.565 | -0.485 | -0.786 | -0.393 | -0.193 | -0.606 | -0.093 | -0.076 |
| 002 | 0.645 | 0.207 | 0.155 | -0.193 | 0.323 | -0.048 | 0.006 | 0.145 | -0.414 | 0.466 |
| 003 | -0.429 | -0.184 | -0.181 | -0.256 | -0.070 | 0.067 | 0.035 | -0.247 | -0.259 | -0.317 |

| | OTU 150 | OTU 151 | OTU 156 | OTU 157 | OTU 160 | OTU 161 | OTU 163 | OTU 166 | OTU 169 | OTU 170 |
|---|---|---|---|---|---|---|---|---|---|---|
| FACTOR01 | -0.164 | -0.803 | -0.649 | -0.229 | -0.572 | -0.427 | -0.470 | -0.175 | -0.506 | -0.362 |
| FACTOR02 | 0.359 | 0.492 | 0.315 | -0.044 | 0.343 | 0.239 | 0.079 | 0.247 | 0.619 | 0.294 |
| FACTOR03 | 0.207 | -0.091 | -0.009 | 0.134 | 0.085 | -0.076 | 0.122 | 0.365 | 0.047 | -0.214 |

| | OTU 172 | OTU 173 | OTU 174 | OTU 175 | OTU 176 | OTU 178 | OTU 179 | OTU 180 | OTU 184 | OTU 185 |
|---|---|---|---|---|---|---|---|---|---|---|
| FACTOR01 | 1.116 | 1.168 | 0.827 | 0.513 | 0.500 | -0.144 | -0.065 | -0.161 | -0.033 | 0.016 |
| FACTOR02 | -0.598 | -0.629 | 0.098 | -1.219 | 0.082 | -0.089 | 0.057 | -0.242 | 0.266 | 0.224 |
| FACTOR03 | -0.063 | 0.508 | 0.103 | 2.784 | -0.165 | -0.168 | 0.442 | -0.099 | -0.013 | 0.013 |



| | OTU 186 | OTU 190 | OTU 192 | OTU 193 | OTU 195 | OTU 199 | OTU 201 | OTU 203 | OTU 204 | OTU 205 |
|---|---|---|---|---|---|---|---|---|---|---|
| FACTOR01 | -0.037 | -0.066 | 0.102 | -0.224 | -0.056 | -0.218 | -0.220 | 0.009 | -0.045 | 0.092 |
| FACTOR02 | 0.286 | 0.168 | 0.194 | 0.327 | 0.290 | 0.110 | 0.369 | 0.210 | 0.404 | 0.276 |
| FACTOR03 | 0.004 | -0.079 | 0.295 | -0.196 | -0.077 | -0.404 | -0.148 | -0.078 | -0.358 | 0.002 |

| | OTU 207 | OTU 208 | OTU 211 | OTU 214 | OTU 215 | OTU 217 | OTU 219 | OTU 222 | OTU 223 | OTU 224 |
|---|---|---|---|---|---|---|---|---|---|---|
| FACTOR01 | -0.077 | 0.012 | 0.316 | 0.674 | 0.625 | 0.792 | 0.879 | -1.199 | -0.814 | -0.483 |
| FACTOR02 | 0.200 | 0.132 | -0.109 | 0.376 | 0.236 | -0.010 | -0.131 | 0.204 | 0.288 | 0.374 |
| FACTOR03 | -0.082 | 0.034 | 0.017 | 0.096 | 0.009 | 0.180 | 0.137 | 0.062 | 0.109 | 0.141 |

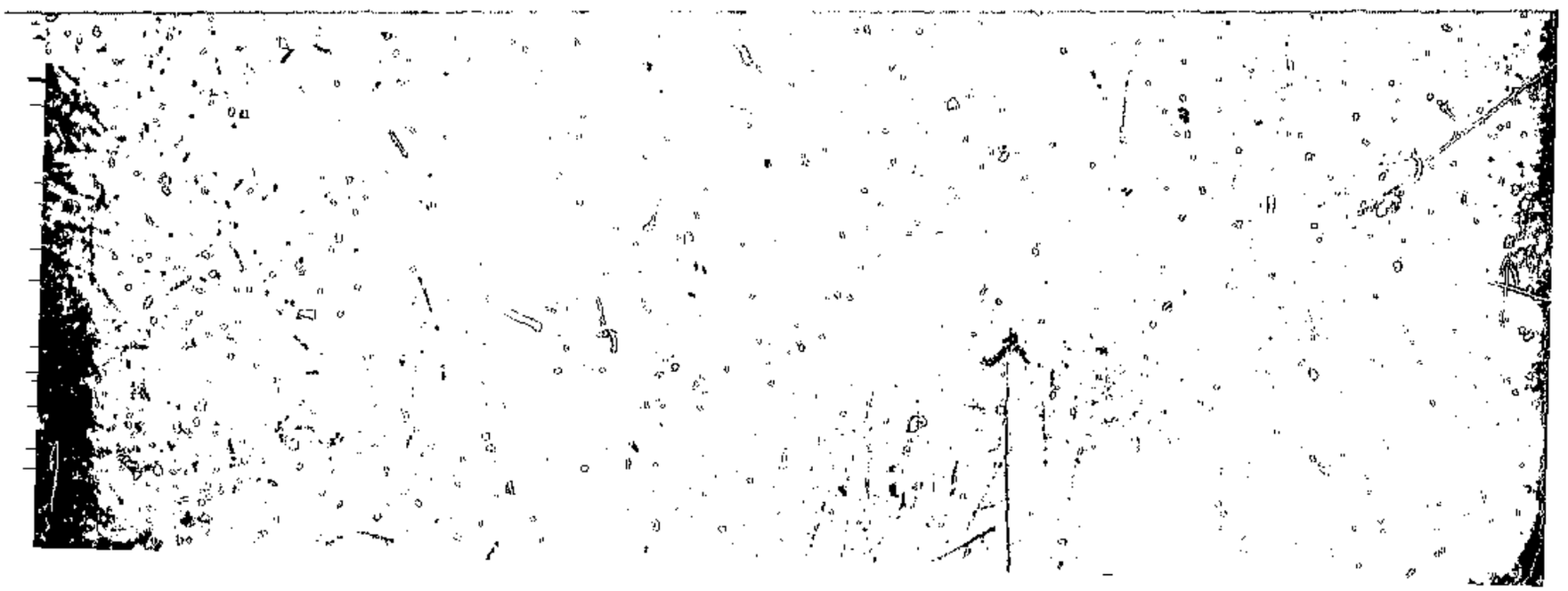
| | OTU 226 | OTU 228 | OTU 232 | OTU 233 | OTU 237 | OTU 238 | OTU 240 | OTU 242 | OTU 245 | OTU 250 |
|---|---|---|---|---|---|---|---|---|---|---|
| FACTOR01 | -0.730 | -0.169 | -0.307 | -0.866 | -0.958 | -0.553 | -0.492 | -0.351 | -0.506 | -0.491 |
| FACTOR02 | -0.119 | -0.439 | -0.049 | 0.120 | 0.201 | 0.160 | -0.005 | -0.159 | -0.068 | -0.063 |
| FACTOR03 | -0.131 | 0.077 | -0.053 | 0.156 | 0.000 | 0.072 | -0.114 | 0.091 | 0.162 | 0.364 |

| | OTU 253 | OTU 255 | OTU 257 | OTU 258 | OTU 261 | OTU 263 | OTU 265 | OTU 267 | OTU 269 | OTU 271 |
|---|---|---|---|---|---|---|---|---|---|---|
| FACTOR01 | -0.435 | -0.186 | -0.089 | -0.312 | -0.148 | -0.125 | -0.589 | -0.484 | -0.615 | -0.339 |
| FACTOR02 | -0.064 | -0.447 | -0.095 | -0.085 | -0.353 | -0.405 | -0.190 | -0.107 | -0.097 | 0.125 |
| FACTOR03 | 0.323 | 0.361 | 0.343 | 0.105 | 0.149 | 0.063 | 0.260 | 0.125 | 0.046 | 0.309 |

| | OTU 274 | OTU 275 | OTU 277 | OTU 279 | OTU 284 | OTU 285 | OTU 287 | OTU 290 | OTU 293 | OTU 294 |
|---|---|---|---|---|---|---|---|---|---|---|
| FACTOR01 | -0.164 | -0.399 | -0.548 | -0.343 | -0.549 | -0.592 | -0.304 | -0.164 | -0.070 | -0.256 |
| FACTOR02 | 0.095 | -0.002 | 0.083 | 0.034 | 0.151 | 0.204 | -0.367 | 0.054 | 0.185 | -0.130 |
| FACTOR03 | 0.173 | 0.266 | 0.326 | 0.161 | 0.069 | 0.263 | 0.400 | 0.046 | -0.076 | -0.114 |

| | OTU 299 | OTU 300 | OTU 302 | OTU 303 | OTU 304 | OTU 307 | OTU 309 | OTU 312 | OTU 315 | OTU 317 |
|---|---|---|---|---|---|---|---|---|---|---|
| FACTOR01 | 0.834 | 0.692 | 0.987 | 0.698 | 0.851 | 0.954 | 0.779 | 0.801 | 0.761 | 0.698 |
| FACTOR02 | 0.524 | 0.096 | -0.126 | 0.214 | -0.446 | 0.227 | 0.166 | 0.032 | 0.271 | -0.382 |
| FACTOR03 | 0.333 | -0.061 | 0.210 | 0.349 | 0.273 | 0.159 | 0.177 | -0.101 | 0.230 | 0.211 |

| | OTU 323 | OTU 325 | OTU 328 | OTU 329 | OTU 331 | OTU 334 | OTU 335 | OTU 336 |
|---|---|---|---|---|---|---|---|---|
| FACTOR01 | 0.742 | 0.790 | 0.491 | 0.621 | 0.822 | 0.683 | 0.952 | 0.760 |
| FACTOR02 | 0.141 | -0.049 | 0.210 | 0.168 | 0.272 | 0.220 | 0.209 | 0.110 |
| FACTOR03 | -0.256 | 0.450 | -0.230 | 0.098 | 0.270 | 0.241 | 0.647 | 0.842 |



**Author** Haines David William
**Name of thesis** A Numerical Taxonomic Study Of The Brachylaena Discolor-uniflora Species Complex (compositae). 1988

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