

$$mAIC = n \cdot \log(rss/n) + 2 \cdot p^{1.75}$$

07/19/2009

SCAD for s_0 : $E[\#act\ eff] + 0.25 \cdot SD(\#act\ eff)$

No. factors = 10; $q_{me} = 0.05$; Active Eff. Dist $N(12, 4)$; Inactive Eff. Dist $N(0, 1)$; Simulation size 100

Averages: for all effects

| | Sens | Spec | sPPV | sNPV | FDR | FNPV | Type I | Type II | MSTr | MSEst | TMIR |
|--------|--------|--------|--------|--------|--------|--------|--------|---------|------|-------|------|
| DS | 0.6363 | 0.9938 | 0.6250 | 0.9878 | 0.3750 | 0.0122 | 0.0062 | 0.3637 | 1.15 | 0.83 | 0.48 |
| SCAD | 0.9783 | 0.9656 | 0.4222 | 0.9985 | 0.5778 | 0.0015 | 0.0344 | 0.0217 | 1.15 | 2.90 | 0.53 |
| LASSO | 1.0000 | 0.3595 | 0.0408 | 1.0000 | 0.9592 | 0.0000 | 0.6405 | 0.0000 | 1.15 | 35.68 | 0.01 |
| LARS | 1.0000 | 0.3532 | 0.0319 | 1.0000 | 0.9681 | 0.0000 | 0.6468 | 0.0000 | 1.15 | 36.00 | 0.00 |
| GSDS | 0.6070 | 0.9995 | 0.9388 | 0.9872 | 0.0612 | 0.0128 | 0.0005 | 0.3930 | 1.15 | 0.49 | 0.69 |
| GSR2-r | 0.7658 | 0.9783 | 0.4360 | 0.9905 | 0.5640 | 0.0095 | 0.0217 | 0.2342 | 1.15 | 1.82 | 0.38 |
| GSR2 | 0.7767 | 0.9768 | 0.4288 | 0.9907 | 0.5712 | 0.0093 | 0.0232 | 0.2233 | 1.15 | 1.91 | 0.38 |
| FOR | 1.0000 | 0.3718 | 0.0329 | 1.0000 | 0.9671 | 0.0000 | 0.6282 | 0.0000 | 1.15 | 35.00 | 0.00 |
| SWCV | 0.9837 | 0.8346 | 0.1036 | 0.9988 | 0.8964 | 0.0012 | 0.1654 | 0.0163 | 1.15 | 10.01 | 0.00 |

No. factors = 10; $q_{me} = 0.05$; Active Eff. Dist $N(12, 4)$; Inactive Eff. Dist $N(0, 1)$; Simulation size 100

Averages: for main effects

| | Sens | Spec | sPPV | sNPV | FDR | FNPV | Type I | Type II | MSTr | MSEst | TMIR |
|--------|--------|--------|--------|--------|--------|--------|--------|---------|------|-------|------|
| DS | 0.4956 | 0.9940 | 0.7778 | 0.9744 | 0.2222 | 0.0256 | 0.0060 | 0.5044 | 0.46 | 0.27 | 0.73 |
| SCAD | 0.9737 | 0.9635 | 0.6233 | 0.9970 | 0.3767 | 0.0030 | 0.0365 | 0.0263 | 0.46 | 0.77 | 0.74 |
| LASSO | 1.0000 | 0.3706 | 0.0781 | 1.0000 | 0.9219 | 0.0000 | 0.6294 | 0.0000 | 0.46 | 6.47 | 0.01 |
| LARS | 1.0000 | 0.3858 | 0.0711 | 1.0000 | 0.9289 | 0.0000 | 0.6142 | 0.0000 | 0.46 | 6.32 | 0.00 |
| GSDS | 0.4912 | 0.9990 | 0.9565 | 0.9751 | 0.0435 | 0.0249 | 0.0010 | 0.5088 | 0.46 | 0.23 | 0.77 |
| GSR2-r | 0.8421 | 0.9043 | 0.3476 | 0.9890 | 0.6524 | 0.0110 | 0.0957 | 0.1579 | 0.46 | 1.29 | 0.41 |
| GSR2 | 0.8421 | 0.8991 | 0.3381 | 0.9890 | 0.6619 | 0.0110 | 0.1009 | 0.1579 | 0.46 | 1.34 | 0.40 |
| FOR | 1.0000 | 0.3624 | 0.0681 | 1.0000 | 0.9319 | 0.0000 | 0.6376 | 0.0000 | 0.46 | 6.54 | 0.00 |
| SWCV | 0.9737 | 0.8421 | 0.2185 | 0.9962 | 0.7815 | 0.0038 | 0.1579 | 0.0263 | 0.46 | 1.92 | 0.23 |

No. factors = 10; $q_{me} = 0.05$; Active Eff. Dist $N(12, 4)$; Inactive Eff. Dist $N(0, 1)$; Simulation size 100

Averages: for interactions

| | Sens | Spec | sPPV | sNPV | FDR | FNPV | Type I | Type II | MSTr | MSEst | TMIR |
|--------|--------|--------|--------|--------|--------|--------|--------|---------|------|-------|------|
| DS | 0.5748 | 0.9938 | 0.5385 | 0.9907 | 0.4615 | 0.0093 | 0.0063 | 0.4252 | 0.69 | 0.56 | 0.57 |
| SCAD | 0.9714 | 0.9661 | 0.3439 | 0.9989 | 0.6561 | 0.0011 | 0.0339 | 0.0286 | 0.69 | 2.13 | 0.53 |
| LASSO | 1.0000 | 0.3570 | 0.0325 | 1.0000 | 0.9675 | 0.0000 | 0.6430 | 0.0000 | 0.69 | 29.21 | 0.01 |
| LARS | 1.0000 | 0.3461 | 0.0234 | 1.0000 | 0.9766 | 0.0000 | 0.6539 | 0.0000 | 0.69 | 29.68 | 0.00 |
| GSDS | 0.5119 | 0.9996 | 0.9231 | 0.9899 | 0.0769 | 0.0101 | 0.0004 | 0.4881 | 0.69 | 0.26 | 0.77 |
| GSR2-r | 0.6143 | 0.9944 | 0.5400 | 0.9908 | 0.4600 | 0.0092 | 0.0056 | 0.3857 | 0.69 | 0.53 | 0.59 |
| GSR2 | 0.6429 | 0.9938 | 0.5283 | 0.9910 | 0.4717 | 0.0090 | 0.0062 | 0.3571 | 0.69 | 0.57 | 0.58 |
| FOR | 1.0000 | 0.3736 | 0.0243 | 1.0000 | 0.9757 | 0.0000 | 0.6264 | 0.0000 | 0.69 | 28.46 | 0.00 |
| SWCV | 0.9829 | 0.8327 | 0.0859 | 0.9993 | 0.9141 | 0.0007 | 0.1673 | 0.0171 | 0.69 | 8.09 | 0.00 |

$$mAIC = n \cdot \log(rss/n) + 2 \cdot p^{1.75}$$

07/19/2009

SCAD for s_0 : $E[\#act\ eff] + 0.25 \cdot SD(\#act\ eff)$

No. factors = 10; $q_{me} = 0.05$; Active Eff. Dist $N(24, 4)$; Inactive Eff. Dist $N(0, 1)$; Simulation size 100

Averages: for all effects

| | Sens | Spec | sPPV | sNPV | FDR | FNPV | Type I | Type II | MSTr | MSEst | TMIR |
|--------|--------|--------|--------|--------|--------|--------|--------|---------|------|-------|------|
| DS | 0.9685 | 0.9962 | 0.7397 | 0.9991 | 0.2603 | 0.0009 | 0.0038 | 0.0315 | 1.18 | 1.34 | 0.76 |
| SCAD | 1.0000 | 0.9594 | 0.4073 | 1.0000 | 0.5927 | 0.0000 | 0.0406 | 0.0000 | 1.18 | 3.36 | 0.42 |
| LASSO | 1.0000 | 0.3533 | 0.0328 | 1.0000 | 0.9672 | 0.0000 | 0.6467 | 0.0000 | 1.18 | 36.00 | 0.00 |
| LARS | 1.0000 | 0.3533 | 0.0328 | 1.0000 | 0.9672 | 0.0000 | 0.6467 | 0.0000 | 1.18 | 36.00 | 0.00 |
| GSDS | 0.9586 | 0.9996 | 0.9636 | 0.9991 | 0.0364 | 0.0009 | 0.0004 | 0.0414 | 1.18 | 1.15 | 0.93 |
| GSR2-r | 0.8315 | 0.9762 | 0.4762 | 0.9937 | 0.5237 | 0.0063 | 0.0238 | 0.1685 | 1.18 | 2.14 | 0.33 |
| GSR2 | 0.8315 | 0.9747 | 0.4658 | 0.9937 | 0.5342 | 0.0063 | 0.0253 | 0.1685 | 1.18 | 2.22 | 0.32 |
| FOR | 1.0000 | 0.3719 | 0.0337 | 1.0000 | 0.9663 | 0.0000 | 0.6281 | 0.0000 | 1.18 | 35.00 | 0.00 |
| SWCV | 1.0000 | 0.8527 | 0.1766 | 1.0000 | 0.8234 | 0.0000 | 0.1473 | 0.0000 | 1.18 | 9.15 | 0.01 |

No. factors = 10; $q_{me} = 0.05$; Active Eff. Dist $N(24, 4)$; Inactive Eff. Dist $N(0, 1)$; Simulation size 100

Averages: for main effects

| | Sens | Spec | sPPV | sNPV | FDR | FNPV | Type I | Type II | MSTr | MSEst | TMIR |
|--------|--------|--------|--------|--------|--------|--------|--------|---------|------|-------|------|
| DS | 0.9773 | 0.9950 | 0.8980 | 0.9978 | 0.1020 | 0.0022 | 0.0050 | 0.0227 | 0.53 | 0.56 | 0.93 |
| SCAD | 1.0000 | 0.9566 | 0.6178 | 1.0000 | 0.3822 | 0.0000 | 0.0434 | 0.0000 | 0.53 | 0.94 | 0.71 |
| LASSO | 1.0000 | 0.3767 | 0.0819 | 1.0000 | 0.9181 | 0.0000 | 0.6233 | 0.0000 | 0.53 | 6.43 | 0.00 |
| LARS | 1.0000 | 0.3926 | 0.0826 | 1.0000 | 0.9174 | 0.0000 | 0.6074 | 0.0000 | 0.53 | 6.28 | 0.00 |
| GSDS | 0.9886 | 1.0000 | 1.0000 | 0.9989 | 0.0000 | 0.0011 | 0.0000 | 0.0114 | 0.53 | 0.52 | 0.99 |
| GSR2-r | 0.9508 | 0.8935 | 0.3833 | 0.9938 | 0.6167 | 0.0062 | 0.1065 | 0.0492 | 0.53 | 1.51 | 0.37 |
| GSR2 | 0.9394 | 0.8871 | 0.3724 | 0.9923 | 0.6276 | 0.0077 | 0.1129 | 0.0606 | 0.53 | 1.56 | 0.34 |
| FOR | 1.0000 | 0.3588 | 0.0799 | 1.0000 | 0.9201 | 0.0000 | 0.6412 | 0.0000 | 0.53 | 6.61 | 0.00 |
| SWCV | 1.0000 | 0.8497 | 0.3257 | 1.0000 | 0.6743 | 0.0000 | 0.1503 | 0.0000 | 0.53 | 1.96 | 0.28 |

No. factors = 10; $q_{me} = 0.05$; Active Eff. Dist $N(24, 4)$; Inactive Eff. Dist $N(0, 1)$; Simulation size 100

Averages: for interactions

| | Sens | Spec | sPPV | sNPV | FDR | FNPV | Type I | Type II | MSTr | MSEst | TMIR |
|--------|--------|--------|--------|--------|--------|--------|--------|---------|------|-------|------|
| DS | 0.9625 | 0.9964 | 0.7273 | 0.9993 | 0.2727 | 0.0007 | 0.0036 | 0.0375 | 0.65 | 0.78 | 0.82 |
| SCAD | 1.0000 | 0.9600 | 0.3330 | 1.0000 | 0.6670 | 0.0000 | 0.0400 | 0.0000 | 0.65 | 2.42 | 0.45 |
| LASSO | 1.0000 | 0.3481 | 0.0221 | 1.0000 | 0.9779 | 0.0000 | 0.6519 | 0.0000 | 0.65 | 29.57 | 0.00 |
| LARS | 1.0000 | 0.3448 | 0.0221 | 1.0000 | 0.9779 | 0.0000 | 0.6552 | 0.0000 | 0.65 | 29.72 | 0.00 |
| GSDS | 0.9458 | 0.9996 | 0.9512 | 0.9991 | 0.0488 | 0.0009 | 0.0004 | 0.0542 | 0.65 | 0.63 | 0.94 |
| GSR2-r | 0.6875 | 0.9942 | 0.6034 | 0.9937 | 0.3966 | 0.0063 | 0.0058 | 0.3125 | 0.65 | 0.63 | 0.58 |
| GSR2 | 0.6958 | 0.9938 | 0.6102 | 0.9939 | 0.3898 | 0.0061 | 0.0062 | 0.3042 | 0.65 | 0.66 | 0.57 |
| FOR | 1.0000 | 0.3748 | 0.0232 | 1.0000 | 0.9768 | 0.0000 | 0.6252 | 0.0000 | 0.65 | 28.39 | 0.00 |
| SWCV | 1.0000 | 0.8531 | 0.1390 | 1.0000 | 0.8610 | 0.0000 | 0.1469 | 0.0000 | 0.65 | 7.19 | 0.03 |

$$mAIC = n \cdot \log(rss/n) + 2 \cdot p^{1.75}$$

07/19/2009

SCAD for s_0 : $E[\#act\ eff] + 0.25 \cdot SD(\#act\ eff)$

No. factors = 10; $q_{me} = 0.2$; Active Eff. Dist $N(12, 4)$; Inactive Eff. Dist $N(0, 1)$; Simulation size 100

Averages: for all effects

| | Sens | Spec | sPPV | sNPV | FDR | FNPV | Type I | Type II | MSTr | MSEst | TMIR |
|--------|--------|--------|--------|--------|--------|--------|--------|---------|------|-------|------|
| DS | 0.3697 | 0.9991 | 0.9583 | 0.9337 | 0.0417 | 0.0663 | 0.0009 | 0.6303 | 4.63 | 1.11 | 0.19 |
| SCAD | 0.9834 | 0.8057 | 0.4050 | 0.9942 | 0.5950 | 0.0058 | 0.1943 | 0.0166 | 4.63 | 14.31 | 0.11 |
| LASSO | 0.9936 | 0.3774 | 0.1269 | 0.9968 | 0.8731 | 0.0032 | 0.6226 | 0.0064 | 4.63 | 36.00 | 0.00 |
| LARS | 0.9980 | 0.3783 | 0.1281 | 0.9989 | 0.8719 | 0.0011 | 0.6217 | 0.0020 | 4.63 | 36.00 | 0.00 |
| GSDS | 0.3459 | 0.9996 | 0.9787 | 0.9324 | 0.0213 | 0.0676 | 0.0004 | 0.6541 | 4.63 | 1.01 | 0.19 |
| GSR2-r | 0.6731 | 0.9753 | 0.7121 | 0.9577 | 0.2879 | 0.0423 | 0.0247 | 0.3269 | 4.63 | 3.73 | 0.13 |
| GSR2 | 0.6806 | 0.9772 | 0.7206 | 0.9585 | 0.2794 | 0.0415 | 0.0228 | 0.3194 | 4.63 | 3.66 | 0.14 |
| FOR | 0.9925 | 0.3973 | 0.1303 | 0.9965 | 0.8697 | 0.0035 | 0.6027 | 0.0075 | 4.63 | 34.99 | 0.00 |
| SWCV | 0.9710 | 0.8615 | 0.4001 | 0.9939 | 0.5999 | 0.0061 | 0.1385 | 0.0290 | 4.63 | 11.37 | 0.01 |

No. factors = 10; $q_{me} = 0.2$; Active Eff. Dist $N(12, 4)$; Inactive Eff. Dist $N(0, 1)$; Simulation size 100

Averages: for main effects

| | Sens | Spec | sPPV | sNPV | FDR | FNPV | Type I | Type II | MSTr | MSEst | TMIR |
|--------|--------|--------|--------|--------|--------|--------|--------|---------|------|-------|------|
| DS | 0.3557 | 1.0000 | 1.0000 | 0.8418 | 0.0000 | 0.1582 | 0.0000 | 0.6443 | 2.04 | 0.53 | 0.30 |
| SCAD | 0.9867 | 0.8026 | 0.6101 | 0.9902 | 0.3899 | 0.0098 | 0.1974 | 0.0133 | 2.04 | 3.58 | 0.33 |
| LASSO | 0.9978 | 0.3971 | 0.2932 | 0.9967 | 0.7068 | 0.0033 | 0.6029 | 0.0022 | 2.04 | 6.80 | 0.00 |
| LARS | 0.9978 | 0.3964 | 0.2910 | 0.9965 | 0.7090 | 0.0035 | 0.6036 | 0.0022 | 2.04 | 6.80 | 0.00 |
| GSDS | 0.4070 | 1.0000 | 1.0000 | 0.8500 | 0.0000 | 0.1500 | 0.0000 | 0.5930 | 2.04 | 0.63 | 0.32 |
| GSR2-r | 0.8133 | 0.8609 | 0.6075 | 0.9207 | 0.3925 | 0.0793 | 0.1391 | 0.1867 | 2.04 | 2.59 | 0.20 |
| GSR2 | 0.8200 | 0.8691 | 0.6165 | 0.9259 | 0.3835 | 0.0741 | 0.1309 | 0.1800 | 2.04 | 2.55 | 0.21 |
| FOR | 0.9933 | 0.4100 | 0.2984 | 0.9939 | 0.7016 | 0.0061 | 0.5900 | 0.0067 | 2.04 | 6.75 | 0.00 |
| SWCV | 0.9748 | 0.8606 | 0.6612 | 0.9865 | 0.3388 | 0.0135 | 0.1394 | 0.0252 | 2.04 | 3.05 | 0.33 |

No. factors = 10; $q_{me} = 0.2$; Active Eff. Dist $N(12, 4)$; Inactive Eff. Dist $N(0, 1)$; Simulation size 100

Averages: for interactions

| | Sens | Spec | sPPV | sNPV | FDR | FNPV | Type I | Type II | MSTr | MSEst | TMIR |
|--------|--------|--------|--------|--------|--------|--------|--------|---------|------|-------|------|
| DS | 0.2841 | 0.9989 | 0.9259 | 0.9536 | 0.0741 | 0.0464 | 0.0011 | 0.7159 | 2.59 | 0.58 | 0.26 |
| SCAD | 0.9789 | 0.8063 | 0.3411 | 0.9954 | 0.6589 | 0.0046 | 0.1937 | 0.0211 | 2.59 | 10.73 | 0.11 |
| LASSO | 0.9895 | 0.3726 | 0.0881 | 0.9969 | 0.9119 | 0.0031 | 0.6274 | 0.0105 | 2.59 | 29.20 | 0.00 |
| LARS | 0.9982 | 0.3737 | 0.0897 | 0.9993 | 0.9103 | 0.0007 | 0.6263 | 0.0018 | 2.59 | 29.20 | 0.00 |
| GSDS | 0.1597 | 0.9996 | 0.9459 | 0.9499 | 0.0541 | 0.0501 | 0.0004 | 0.8403 | 2.59 | 0.38 | 0.22 |
| GSR2-r | 0.5086 | 0.9973 | 0.9103 | 0.9641 | 0.0897 | 0.0359 | 0.0027 | 0.4914 | 2.59 | 1.14 | 0.34 |
| GSR2 | 0.5334 | 0.9980 | 0.9333 | 0.9642 | 0.0667 | 0.0358 | 0.0020 | 0.4666 | 2.59 | 1.11 | 0.41 |
| FOR | 0.9915 | 0.3952 | 0.0906 | 0.9975 | 0.9094 | 0.0025 | 0.6048 | 0.0085 | 2.59 | 28.24 | 0.00 |
| SWCV | 0.9629 | 0.8615 | 0.3169 | 0.9953 | 0.6831 | 0.0047 | 0.1385 | 0.0371 | 2.59 | 8.32 | 0.02 |

$$mAIC = n \cdot \log(rss/n) + 2 \cdot p^{1.75}$$

07/19/2009

SCAD for s_0 : $E[\#act\ eff] + 0.25 \cdot SD(\#act\ eff)$

No. factors = 10; $q_{me} = 0.2$; Active Eff. Dist $N(24, 4)$; Inactive Eff. Dist $N(0, 1)$; Simulation size 100

Averages: for all effects

| | Sens | Spec | sPPV | sNPV | FDR | FNPV | Type I | Type II | MSTr | MSEst | TMIR |
|--------|--------|--------|--------|--------|--------|--------|--------|---------|------|-------|------|
| DS | 0.8879 | 0.9985 | 0.9421 | 0.9851 | 0.0579 | 0.0149 | 0.0015 | 0.1121 | 4.16 | 3.47 | 0.66 |
| SCAD | 0.9896 | 0.8604 | 0.5376 | 0.9974 | 0.4624 | 0.0026 | 0.1396 | 0.0104 | 4.16 | 11.28 | 0.33 |
| LASSO | 0.9933 | 0.3740 | 0.1142 | 0.9974 | 0.8858 | 0.0026 | 0.6260 | 0.0067 | 4.16 | 36.00 | 0.00 |
| LARS | 1.0000 | 0.3751 | 0.1156 | 1.0000 | 0.8844 | 0.0000 | 0.6249 | 0.0000 | 4.16 | 36.00 | 0.00 |
| GSDS | 0.8748 | 0.9998 | 0.9889 | 0.9855 | 0.0111 | 0.0145 | 0.0002 | 0.1252 | 4.16 | 3.43 | 0.72 |
| GSR2-r | 0.7486 | 0.9716 | 0.6804 | 0.9678 | 0.3196 | 0.0322 | 0.0284 | 0.2514 | 4.16 | 3.97 | 0.12 |
| GSR2 | 0.7598 | 0.9709 | 0.6896 | 0.9696 | 0.3104 | 0.0304 | 0.0291 | 0.2402 | 4.16 | 4.10 | 0.11 |
| FOR | 0.9956 | 0.3995 | 0.1171 | 0.9970 | 0.8829 | 0.0030 | 0.6005 | 0.0044 | 4.16 | 34.66 | 0.00 |
| SWCV | 0.9829 | 0.9017 | 0.4692 | 0.9958 | 0.5308 | 0.0042 | 0.0983 | 0.0171 | 4.16 | 9.05 | 0.11 |

No. factors = 10; $q_{me} = 0.2$; Active Eff. Dist $N(24, 4)$; Inactive Eff. Dist $N(0, 1)$; Simulation size 100

Averages: for main effects

| | Sens | Spec | sPPV | sNPV | FDR | FNPV | Type I | Type II | MSTr | MSEst | TMIR |
|--------|--------|--------|--------|--------|--------|--------|--------|---------|------|-------|------|
| DS | 0.8759 | 1.0000 | 1.0000 | 0.9666 | 0.0000 | 0.0334 | 0.0000 | 0.1241 | 1.85 | 1.55 | 0.81 |
| SCAD | 0.9886 | 0.8581 | 0.6793 | 0.9940 | 0.3207 | 0.0060 | 0.1419 | 0.0114 | 1.85 | 3.02 | 0.52 |
| LASSO | 0.9896 | 0.3731 | 0.2659 | 0.9922 | 0.7341 | 0.0078 | 0.6269 | 0.0104 | 1.85 | 6.96 | 0.01 |
| LARS | 1.0000 | 0.3685 | 0.2676 | 1.0000 | 0.7324 | 0.0000 | 0.6315 | 0.0000 | 1.85 | 7.05 | 0.01 |
| GSDS | 0.9309 | 0.9990 | 0.9886 | 0.9806 | 0.0114 | 0.0194 | 0.0010 | 0.0691 | 1.85 | 1.70 | 0.87 |
| GSR2-r | 0.8475 | 0.8443 | 0.5636 | 0.9459 | 0.4364 | 0.0541 | 0.1557 | 0.1525 | 1.85 | 2.75 | 0.14 |
| GSR2 | 0.8835 | 0.8447 | 0.5816 | 0.9571 | 0.4184 | 0.0429 | 0.1553 | 0.1165 | 1.85 | 2.84 | 0.14 |
| FOR | 0.9962 | 0.4051 | 0.2801 | 0.9959 | 0.7199 | 0.0041 | 0.5949 | 0.0038 | 1.85 | 6.71 | 0.01 |
| SWCV | 0.9792 | 0.8875 | 0.6732 | 0.9891 | 0.3268 | 0.0109 | 0.1125 | 0.0208 | 1.85 | 2.71 | 0.40 |

No. factors = 10; $q_{me} = 0.2$; Active Eff. Dist $N(24, 4)$; Inactive Eff. Dist $N(0, 1)$; Simulation size 100

Averages: for interactions

| | Sens | Spec | sPPV | sNPV | FDR | FNPV | Type I | Type II | MSTr | MSEst | TMIR |
|--------|--------|--------|--------|--------|--------|--------|--------|---------|------|-------|------|
| DS | 0.8842 | 0.9982 | 0.9353 | 0.9891 | 0.0647 | 0.0109 | 0.0018 | 0.1158 | 2.31 | 1.92 | 0.77 |
| SCAD | 0.9889 | 0.8609 | 0.4802 | 0.9981 | 0.5198 | 0.0019 | 0.1391 | 0.0111 | 2.31 | 8.26 | 0.37 |
| LASSO | 0.9955 | 0.3745 | 0.0798 | 0.9987 | 0.9202 | 0.0013 | 0.6255 | 0.0045 | 2.31 | 29.04 | 0.00 |
| LARS | 1.0000 | 0.3771 | 0.0804 | 1.0000 | 0.9196 | 0.0000 | 0.6229 | 0.0000 | 2.31 | 28.95 | 0.00 |
| GSDS | 0.8197 | 1.0000 | 1.0000 | 0.9866 | 0.0000 | 0.0134 | 0.0000 | 0.1803 | 2.31 | 1.73 | 0.76 |
| GSR2-r | 0.6371 | 0.9967 | 0.8846 | 0.9718 | 0.1154 | 0.0282 | 0.0033 | 0.3629 | 2.31 | 1.22 | 0.47 |
| GSR2 | 0.6305 | 0.9960 | 0.8734 | 0.9720 | 0.1266 | 0.0280 | 0.0040 | 0.3695 | 2.31 | 1.26 | 0.47 |
| FOR | 0.9944 | 0.3990 | 0.0810 | 0.9973 | 0.9190 | 0.0027 | 0.6010 | 0.0056 | 2.31 | 27.95 | 0.00 |
| SWCV | 0.9832 | 0.9044 | 0.3913 | 0.9972 | 0.6087 | 0.0028 | 0.0956 | 0.0168 | 2.31 | 6.34 | 0.13 |

$$mAIC = n \cdot \log(rss/n) + 2 \cdot p^{1.75}$$

07/19/2009

SCAD for s_0 : $E[\#act\ eff] + 0.25 \cdot SD(\#act\ eff)$

No. factors = 15; $q_{me} = 0.05$; Active Eff. Dist $N(12, 4)$; Inactive Eff. Dist $N(0, 1)$; Simulation size 100

Averages: for all effects

| | Sens | Spec | sPPV | sNPV | FDR | FNPV | Type I | Type II | MSTr | MSEst | TMIR |
|--------|--------|--------|--------|--------|--------|--------|--------|---------|------|-------|------|
| DS | 0.3571 | 0.9944 | 0.4627 | 0.9851 | 0.5373 | 0.0149 | 0.0056 | 0.6429 | 2.34 | 1.23 | 0.19 |
| SCAD | 0.5896 | 0.9590 | 0.3003 | 0.9914 | 0.6997 | 0.0086 | 0.0410 | 0.4104 | 2.34 | 6.18 | 0.18 |
| LASSO | 0.5943 | 0.4765 | 0.0222 | 0.9835 | 0.9778 | 0.0165 | 0.5235 | 0.4057 | 2.34 | 63.00 | 0.00 |
| LARS | 0.5943 | 0.4765 | 0.0222 | 0.9835 | 0.9778 | 0.0165 | 0.5235 | 0.4057 | 2.34 | 63.00 | 0.00 |
| GSDS | 0.3115 | 0.9997 | 0.9464 | 0.9851 | 0.0536 | 0.0149 | 0.0003 | 0.6885 | 2.34 | 0.59 | 0.36 |
| GSR2-r | 0.4530 | 0.9863 | 0.4150 | 0.9882 | 0.5850 | 0.0118 | 0.0137 | 0.5470 | 2.34 | 2.57 | 0.12 |
| GSR2 | 0.4588 | 0.9853 | 0.3978 | 0.9882 | 0.6022 | 0.0118 | 0.0147 | 0.5412 | 2.34 | 2.69 | 0.07 |
| FOR | 0.5943 | 0.4783 | 0.0223 | 0.9836 | 0.9777 | 0.0164 | 0.5217 | 0.4057 | 2.34 | 62.78 | 0.00 |
| SWCV | 0.5943 | 0.8190 | 0.0892 | 0.9883 | 0.9108 | 0.0117 | 0.1810 | 0.4057 | 2.34 | 22.53 | 0.00 |

No. factors = 15; $q_{me} = 0.05$; Active Eff. Dist $N(12, 4)$; Inactive Eff. Dist $N(0, 1)$; Simulation size 100

Averages: for main effects

| | Sens | Spec | sPPV | sNPV | FDR | FNPV | Type I | Type II | MSTr | MSEst | TMIR |
|--------|--------|--------|--------|--------|--------|--------|--------|---------|------|-------|------|
| DS | 0.4231 | 0.9883 | 0.6190 | 0.9712 | 0.3810 | 0.0288 | 0.0117 | 0.5769 | 0.7 | 0.45 | 0.56 |
| SCAD | 1.0000 | 0.9176 | 0.4671 | 1.0000 | 0.5329 | 0.0000 | 0.0824 | 0.0000 | 0.7 | 1.86 | 0.48 |
| LASSO | 1.0000 | 0.0000 | 0.0467 | NaN | 0.9533 | NaN | 1.0000 | 0.0000 | 0.7 | 15.00 | 0.00 |
| LARS | 1.0000 | 0.0000 | 0.0467 | NaN | 0.9533 | NaN | 1.0000 | 0.0000 | 0.7 | 15.00 | 0.00 |
| GSDS | 0.4856 | 0.9993 | 0.9697 | 0.9739 | 0.0303 | 0.0261 | 0.0007 | 0.5144 | 0.7 | 0.33 | 0.67 |
| GSR2-r | 0.7147 | 0.9100 | 0.3193 | 0.9828 | 0.6807 | 0.0172 | 0.0900 | 0.2853 | 0.7 | 1.78 | 0.19 |
| GSR2 | 0.7147 | 0.9047 | 0.3034 | 0.9829 | 0.6966 | 0.0171 | 0.0953 | 0.2853 | 0.7 | 1.86 | 0.14 |
| FOR | 1.0000 | 0.0040 | 0.0467 | 1.0000 | 0.9533 | 0.0000 | 0.9960 | 0.0000 | 0.7 | 14.94 | 0.00 |
| SWCV | 1.0000 | 0.6584 | 0.1492 | 1.0000 | 0.8508 | 0.0000 | 0.3416 | 0.0000 | 0.7 | 5.46 | 0.06 |

No. factors = 15; $q_{me} = 0.05$; Active Eff. Dist $N(12, 4)$; Inactive Eff. Dist $N(0, 1)$; Simulation size 100

Averages: for interactions

| | Sens | Spec | sPPV | sNPV | FDR | FNPV | Type I | Type II | MSTr | MSEst | TMIR |
|--------|--------|--------|--------|--------|--------|--------|--------|---------|------|-------|------|
| DS | 0.2586 | 0.9953 | 0.3897 | 0.9871 | 0.6103 | 0.0129 | 0.0047 | 0.7414 | 1.64 | 0.78 | 0.25 |
| SCAD | 0.4159 | 0.9647 | 0.2495 | 0.9904 | 0.7505 | 0.0096 | 0.0353 | 0.5841 | 1.64 | 4.32 | 0.21 |
| LASSO | 0.4209 | 0.5424 | 0.0146 | 0.9835 | 0.9854 | 0.0165 | 0.4576 | 0.5791 | 1.64 | 48.00 | 0.00 |
| LARS | 0.4209 | 0.5424 | 0.0146 | 0.9835 | 0.9854 | 0.0165 | 0.4576 | 0.5791 | 1.64 | 48.00 | 0.00 |
| GSDS | 0.2043 | 0.9998 | 0.9231 | 0.9866 | 0.0769 | 0.0134 | 0.0002 | 0.7957 | 1.64 | 0.26 | 0.41 |
| GSR2-r | 0.3486 | 0.9970 | 0.5846 | 0.9889 | 0.4154 | 0.0111 | 0.0030 | 0.6514 | 1.64 | 0.79 | 0.30 |
| GSR2 | 0.3619 | 0.9967 | 0.5672 | 0.9889 | 0.4328 | 0.0111 | 0.0033 | 0.6381 | 1.64 | 0.83 | 0.29 |
| FOR | 0.4209 | 0.5439 | 0.0146 | 0.9835 | 0.9854 | 0.0165 | 0.4561 | 0.5791 | 1.64 | 47.84 | 0.00 |
| SWCV | 0.4209 | 0.8408 | 0.0711 | 0.9877 | 0.9289 | 0.0123 | 0.1592 | 0.5791 | 1.64 | 17.07 | 0.00 |

$$mAIC = n \cdot \log(rss/n) + 2 \cdot p^{1.75}$$

07/19/2009

SCAD for s_0 : $E[\#act\ eff] + 0.25 \cdot SD(\#act\ eff)$

No. factors = 15; $q_{me} = 0.05$; Active Eff. Dist $N(24, 4)$; Inactive Eff. Dist $N(0, 1)$; Simulation size 100

Averages: for all effects

| | Sens | Spec | sPPV | sNPV | FDR | FNPV | Type I | Type II | MSTr | MSEst | TMIR |
|--------|--------|--------|--------|--------|--------|--------|--------|---------|------|-------|------|
| DS | 0.5989 | 0.9896 | 0.4967 | 0.9911 | 0.5033 | 0.0089 | 0.0104 | 0.4011 | 2.55 | 2.74 | 0.26 |
| SCAD | 0.6210 | 0.9489 | 0.2834 | 0.9913 | 0.7166 | 0.0087 | 0.0511 | 0.3790 | 2.55 | 7.59 | 0.15 |
| LASSO | 0.6253 | 0.4773 | 0.0254 | 0.9833 | 0.9746 | 0.0167 | 0.5227 | 0.3747 | 2.55 | 63.00 | 0.00 |
| LARS | 0.6253 | 0.4773 | 0.0254 | 0.9833 | 0.9746 | 0.0167 | 0.5227 | 0.3747 | 2.55 | 63.00 | 0.00 |
| GSDS | 0.4721 | 1.0000 | 1.0000 | 0.9888 | 0.0000 | 0.0112 | 0.0000 | 0.5279 | 2.55 | 1.23 | 0.41 |
| GSR2-r | 0.4157 | 0.9853 | 0.3835 | 0.9860 | 0.6165 | 0.0140 | 0.0147 | 0.5843 | 2.55 | 2.65 | 0.10 |
| GSR2 | 0.4169 | 0.9868 | 0.3921 | 0.9862 | 0.6079 | 0.0138 | 0.0132 | 0.5831 | 2.55 | 2.48 | 0.12 |
| FOR | 0.6253 | 0.4780 | 0.0254 | 0.9834 | 0.9746 | 0.0166 | 0.5220 | 0.3747 | 2.55 | 62.91 | 0.00 |
| SWCV | 0.6253 | 0.7832 | 0.0947 | 0.9895 | 0.9053 | 0.0105 | 0.2168 | 0.3747 | 2.55 | 27.09 | 0.00 |

No. factors = 15; $q_{me} = 0.05$; Active Eff. Dist $N(24, 4)$; Inactive Eff. Dist $N(0, 1)$; Simulation size 100

Averages: for main effects

| | Sens | Spec | sPPV | sNPV | FDR | FNPV | Type I | Type II | MSTr | MSEst | TMIR |
|--------|--------|--------|--------|--------|--------|--------|--------|---------|------|-------|------|
| DS | 0.9647 | 0.9718 | 0.6522 | 0.9978 | 0.3478 | 0.0022 | 0.0282 | 0.0353 | 0.75 | 1.11 | 0.65 |
| SCAD | 1.0000 | 0.8971 | 0.4345 | 1.0000 | 0.5655 | 0.0000 | 0.1029 | 0.0000 | 0.75 | 2.22 | 0.41 |
| LASSO | 1.0000 | 0.0000 | 0.0500 | NaN | 0.9500 | NaN | 1.0000 | 0.0000 | 0.75 | 15.00 | 0.00 |
| LARS | 1.0000 | 0.0000 | 0.0500 | NaN | 0.9500 | NaN | 1.0000 | 0.0000 | 0.75 | 15.00 | 0.00 |
| GSDS | 0.7324 | 1.0000 | 1.0000 | 0.9861 | 0.0000 | 0.0139 | 0.0000 | 0.2676 | 0.75 | 0.55 | 0.82 |
| GSR2-r | 0.6603 | 0.9049 | 0.2857 | 0.9791 | 0.7143 | 0.0209 | 0.0951 | 0.3397 | 0.75 | 1.84 | 0.20 |
| GSR2 | 0.6699 | 0.9128 | 0.2896 | 0.9792 | 0.7104 | 0.0208 | 0.0872 | 0.3301 | 0.75 | 1.72 | 0.22 |
| FOR | 1.0000 | 0.0015 | 0.0501 | 1.0000 | 0.9499 | 0.0000 | 0.9985 | 0.0000 | 0.75 | 14.98 | 0.00 |
| SWCV | 1.0000 | 0.5663 | 0.1586 | 1.0000 | 0.8414 | 0.0000 | 0.4337 | 0.0000 | 0.75 | 6.94 | 0.04 |

No. factors = 15; $q_{me} = 0.05$; Active Eff. Dist $N(24, 4)$; Inactive Eff. Dist $N(0, 1)$; Simulation size 100

Averages: for interactions

| | Sens | Spec | sPPV | sNPV | FDR | FNPV | Type I | Type II | MSTr | MSEst | TMIR |
|--------|--------|--------|--------|--------|--------|--------|--------|---------|------|-------|------|
| DS | 0.4616 | 0.9920 | 0.4675 | 0.9903 | 0.5325 | 0.0097 | 0.0080 | 0.5384 | 1.8 | 1.63 | 0.31 |
| SCAD | 0.4801 | 0.9560 | 0.2195 | 0.9902 | 0.7805 | 0.0098 | 0.0440 | 0.5199 | 1.8 | 5.37 | 0.16 |
| LASSO | 0.4871 | 0.5431 | 0.0177 | 0.9833 | 0.9823 | 0.0167 | 0.4569 | 0.5129 | 1.8 | 48.00 | 0.00 |
| LARS | 0.4871 | 0.5431 | 0.0177 | 0.9833 | 0.9823 | 0.0167 | 0.4569 | 0.5129 | 1.8 | 48.00 | 0.00 |
| GSDS | 0.3776 | 1.0000 | 1.0000 | 0.9893 | 0.0000 | 0.0107 | 0.0000 | 0.6224 | 1.8 | 0.68 | 0.42 |
| GSR2-r | 0.3152 | 0.9964 | 0.5821 | 0.9870 | 0.4179 | 0.0130 | 0.0036 | 0.6848 | 1.8 | 0.81 | 0.24 |
| GSR2 | 0.3175 | 0.9971 | 0.6094 | 0.9871 | 0.3906 | 0.0129 | 0.0029 | 0.6825 | 1.8 | 0.76 | 0.29 |
| FOR | 0.4871 | 0.5438 | 0.0177 | 0.9834 | 0.9823 | 0.0166 | 0.4562 | 0.5129 | 1.8 | 47.93 | 0.00 |
| SWCV | 0.4871 | 0.8131 | 0.0699 | 0.9887 | 0.9301 | 0.0113 | 0.1869 | 0.5129 | 1.8 | 20.15 | 0.00 |

$$mAIC = n \cdot \log(rss/n) + 2 \cdot p^{1.75}$$

07/19/2009

SCAD for s_0 : $E[\#act\ eff] + 0.25 \cdot SD(\#act\ eff)$

No. factors = 15; $q_{me} = 0.2$; Active Eff. Dist $N(12, 4)$; Inactive Eff. Dist $N(0, 1)$; Simulation size 100

Averages: for all effects

| | Sens | Spec | sPPV | sNPV | FDR | FNPV | Type I | Type II | MSTr | MSEst | TMIR |
|--------|--------|--------|--------|--------|--------|--------|--------|---------|------|-------|------|
| DS | 0.1290 | 0.9958 | 0.6483 | 0.9366 | 0.3517 | 0.0634 | 0.0042 | 0.8710 | 8.34 | 1.29 | 0.00 |
| SCAD | 0.6710 | 0.9257 | 0.4944 | 0.9727 | 0.5056 | 0.0273 | 0.0743 | 0.3290 | 8.34 | 13.82 | 0.03 |
| LASSO | 0.6768 | 0.4863 | 0.0890 | 0.9521 | 0.9110 | 0.0479 | 0.5137 | 0.3232 | 8.34 | 63.00 | 0.00 |
| LARS | 0.6768 | 0.4863 | 0.0890 | 0.9521 | 0.9110 | 0.0479 | 0.5137 | 0.3232 | 8.34 | 63.00 | 0.00 |
| GSDS | 0.1666 | 0.9998 | 0.9785 | 0.9388 | 0.0215 | 0.0612 | 0.0002 | 0.8334 | 8.34 | 1.09 | 0.04 |
| GSR2-r | 0.4318 | 0.9849 | 0.6547 | 0.9549 | 0.3453 | 0.0451 | 0.0151 | 0.5682 | 8.34 | 4.85 | 0.00 |
| GSR2 | 0.4344 | 0.9832 | 0.6659 | 0.9557 | 0.3341 | 0.0443 | 0.0168 | 0.5656 | 8.34 | 5.16 | 0.00 |
| FOR | 0.6768 | 0.4875 | 0.0892 | 0.9522 | 0.9108 | 0.0478 | 0.5125 | 0.3232 | 8.34 | 62.87 | 0.00 |
| SWCV | 0.6743 | 0.8161 | 0.2833 | 0.9689 | 0.7167 | 0.0311 | 0.1839 | 0.3257 | 8.34 | 26.18 | 0.00 |

No. factors = 15; $q_{me} = 0.2$; Active Eff. Dist $N(12, 4)$; Inactive Eff. Dist $N(0, 1)$; Simulation size 100

Averages: for main effects

| | Sens | Spec | sPPV | sNPV | FDR | FNPV | Type I | Type II | MSTr | MSEst | TMIR |
|--------|--------|--------|--------|--------|--------|--------|--------|---------|------|-------|------|
| DS | 0.1675 | 0.9899 | 0.7981 | 0.8165 | 0.2019 | 0.1835 | 0.0101 | 0.8325 | 3.09 | 0.56 | 0.05 |
| SCAD | 0.9893 | 0.8591 | 0.7260 | 0.9946 | 0.2740 | 0.0054 | 0.1409 | 0.0107 | 3.09 | 4.70 | 0.37 |
| LASSO | 1.0000 | 0.0000 | 0.2060 | NaN | 0.7940 | NaN | 1.0000 | 0.0000 | 3.09 | 15.00 | 0.00 |
| LARS | 1.0000 | 0.0000 | 0.2060 | NaN | 0.7940 | NaN | 1.0000 | 0.0000 | 3.09 | 15.00 | 0.00 |
| GSDS | 0.2458 | 1.0000 | 1.0000 | 0.8290 | 0.0000 | 0.1710 | 0.0000 | 0.7542 | 3.09 | 0.64 | 0.08 |
| GSR2-r | 0.5900 | 0.8693 | 0.5290 | 0.8838 | 0.4710 | 0.1162 | 0.1307 | 0.4100 | 3.09 | 3.33 | 0.03 |
| GSR2 | 0.5979 | 0.8611 | 0.5413 | 0.8867 | 0.4587 | 0.1133 | 0.1389 | 0.4021 | 3.09 | 3.50 | 0.03 |
| FOR | 1.0000 | 0.0000 | 0.2060 | NaN | 0.7940 | NaN | 1.0000 | 0.0000 | 3.09 | 15.00 | 0.00 |
| SWCV | 0.9966 | 0.6337 | 0.4819 | 0.9971 | 0.5181 | 0.0029 | 0.3663 | 0.0034 | 3.09 | 7.43 | 0.05 |

No. factors = 15; $q_{me} = 0.2$; Active Eff. Dist $N(12, 4)$; Inactive Eff. Dist $N(0, 1)$; Simulation size 100

Averages: for interactions

| | Sens | Spec | sPPV | sNPV | FDR | FNPV | Type I | Type II | MSTr | MSEst | TMIR |
|--------|--------|--------|--------|--------|--------|--------|--------|---------|------|-------|------|
| DS | 0.0993 | 0.9965 | 0.5328 | 0.9533 | 0.4672 | 0.0467 | 0.0035 | 0.9007 | 5.25 | 0.73 | 0.02 |
| SCAD | 0.4676 | 0.9335 | 0.3759 | 0.9706 | 0.6241 | 0.0294 | 0.0665 | 0.5324 | 5.25 | 9.12 | 0.03 |
| LASSO | 0.4696 | 0.5441 | 0.0525 | 0.9521 | 0.9475 | 0.0479 | 0.4559 | 0.5304 | 5.25 | 48.00 | 0.00 |
| LARS | 0.4696 | 0.5441 | 0.0525 | 0.9521 | 0.9475 | 0.0479 | 0.4559 | 0.5304 | 5.25 | 48.00 | 0.00 |
| GSDS | 0.1278 | 0.9998 | 0.9535 | 0.9539 | 0.0465 | 0.0461 | 0.0002 | 0.8722 | 5.25 | 0.45 | 0.07 |
| GSR2-r | 0.3388 | 0.9988 | 0.9101 | 0.9628 | 0.0899 | 0.0372 | 0.0012 | 0.6612 | 5.25 | 1.52 | 0.10 |
| GSR2 | 0.3384 | 0.9980 | 0.9011 | 0.9632 | 0.0989 | 0.0368 | 0.0020 | 0.6616 | 5.25 | 1.66 | 0.07 |
| FOR | 0.4696 | 0.5454 | 0.0526 | 0.9522 | 0.9474 | 0.0478 | 0.4546 | 0.5304 | 5.25 | 47.87 | 0.00 |
| SWCV | 0.4676 | 0.8377 | 0.1996 | 0.9670 | 0.8004 | 0.0330 | 0.1623 | 0.5324 | 5.25 | 18.75 | 0.00 |

$$mAIC = n \cdot \log(rss/n) + 2 \cdot p^{1.75}$$

07/19/2009

SCAD for s_0 : $E[\#act\ eff] + 0.25 \cdot SD(\#act\ eff)$

No. factors = 15; $q_{me} = 0.2$; Active Eff. Dist $N(24, 4)$; Inactive Eff. Dist $N(0, 1)$; Simulation size 100

Averages: for all effects

| | Sens | Spec | sPPV | sNPV | FDR | FNPV | Type I | Type II | MSTr | MSEst | TMIR |
|--------|--------|--------|--------|--------|--------|--------|--------|---------|------|-------|------|
| DS | 0.5787 | 0.9756 | 0.6079 | 0.9643 | 0.3921 | 0.0357 | 0.0244 | 0.4213 | 8.6 | 7.27 | 0.05 |
| SCAD | 0.6282 | 0.9118 | 0.4456 | 0.9670 | 0.5544 | 0.0330 | 0.0882 | 0.3718 | 8.6 | 15.09 | 0.03 |
| LASSO | 0.6345 | 0.4831 | 0.0857 | 0.9439 | 0.9143 | 0.0561 | 0.5169 | 0.3655 | 8.6 | 63.00 | 0.00 |
| LARS | 0.6345 | 0.4831 | 0.0857 | 0.9439 | 0.9143 | 0.0561 | 0.5169 | 0.3655 | 8.6 | 63.00 | 0.00 |
| GSDS | 0.4492 | 0.9999 | 0.9889 | 0.9565 | 0.0111 | 0.0435 | 0.0001 | 0.5508 | 8.6 | 3.55 | 0.10 |
| GSR2-r | 0.4615 | 0.9807 | 0.6454 | 0.9565 | 0.3546 | 0.0435 | 0.0193 | 0.5385 | 8.6 | 5.81 | 0.00 |
| GSR2 | 0.4429 | 0.9820 | 0.6442 | 0.9552 | 0.3558 | 0.0448 | 0.0180 | 0.5571 | 8.6 | 5.49 | 0.00 |
| FOR | 0.6267 | 0.4894 | 0.0931 | 0.9430 | 0.9069 | 0.0570 | 0.5106 | 0.3733 | 8.6 | 62.20 | 0.00 |
| SWCV | 0.6219 | 0.8038 | 0.2602 | 0.9614 | 0.7398 | 0.0386 | 0.1962 | 0.3781 | 8.6 | 27.03 | 0.00 |

No. factors = 15; $q_{me} = 0.2$; Active Eff. Dist $N(24, 4)$; Inactive Eff. Dist $N(0, 1)$; Simulation size 100

Averages: for main effects

| | Sens | Spec | sPPV | sNPV | FDR | FNPV | Type I | Type II | MSTr | MSEst | TMIR |
|--------|--------|--------|--------|--------|--------|--------|--------|---------|------|-------|------|
| DS | 0.9079 | 0.9471 | 0.8251 | 0.9714 | 0.1749 | 0.0286 | 0.0529 | 0.0921 | 2.77 | 3.01 | 0.43 |
| SCAD | 0.9880 | 0.8344 | 0.6781 | 0.9946 | 0.3219 | 0.0054 | 0.1656 | 0.0120 | 2.77 | 4.72 | 0.28 |
| LASSO | 1.0000 | 0.0000 | 0.1847 | NaN | 0.8153 | NaN | 1.0000 | 0.0000 | 2.77 | 15.00 | 0.00 |
| LARS | 1.0000 | 0.0000 | 0.1847 | NaN | 0.8153 | NaN | 1.0000 | 0.0000 | 2.77 | 15.00 | 0.00 |
| GSDS | 0.6346 | 0.9993 | 0.9884 | 0.9179 | 0.0116 | 0.0821 | 0.0007 | 0.3654 | 2.77 | 1.68 | 0.35 |
| GSR2-r | 0.6657 | 0.8408 | 0.5013 | 0.9114 | 0.4987 | 0.0886 | 0.1592 | 0.3343 | 2.77 | 3.74 | 0.03 |
| GSR2 | 0.6358 | 0.8488 | 0.5003 | 0.9061 | 0.4997 | 0.0939 | 0.1512 | 0.3642 | 2.77 | 3.54 | 0.03 |
| FOR | 0.9892 | 0.0123 | 0.1827 | 0.9000 | 0.8173 | 0.1000 | 0.9877 | 0.0108 | 2.77 | 14.82 | 0.00 |
| SWCV | 0.9814 | 0.6227 | 0.4479 | 0.9905 | 0.5521 | 0.0095 | 0.3773 | 0.0186 | 2.77 | 7.26 | 0.06 |

No. factors = 15; $q_{me} = 0.2$; Active Eff. Dist $N(24, 4)$; Inactive Eff. Dist $N(0, 1)$; Simulation size 100

Averages: for interactions

| | Sens | Spec | sPPV | sNPV | FDR | FNPV | Type I | Type II | MSTr | MSEst | TMIR |
|--------|--------|--------|--------|--------|--------|--------|--------|---------|------|-------|------|
| DS | 0.4159 | 0.9790 | 0.5062 | 0.9638 | 0.4938 | 0.0362 | 0.0210 | 0.5841 | 5.83 | 4.26 | 0.07 |
| SCAD | 0.4513 | 0.9212 | 0.3397 | 0.9645 | 0.6603 | 0.0355 | 0.0788 | 0.5487 | 5.83 | 10.37 | 0.03 |
| LASSO | 0.4551 | 0.5425 | 0.0548 | 0.9439 | 0.9452 | 0.0561 | 0.4575 | 0.5449 | 5.83 | 48.00 | 0.00 |
| LARS | 0.4551 | 0.5425 | 0.0548 | 0.9439 | 0.9452 | 0.0561 | 0.4575 | 0.5449 | 5.83 | 48.00 | 0.00 |
| GSDS | 0.3613 | 1.0000 | 1.0000 | 0.9616 | 0.0000 | 0.0384 | 0.0000 | 0.6387 | 5.83 | 1.87 | 0.10 |
| GSR2-r | 0.3656 | 0.9980 | 0.9032 | 0.9614 | 0.0968 | 0.0386 | 0.0020 | 0.6344 | 5.83 | 2.07 | 0.04 |
| GSR2 | 0.3526 | 0.9984 | 0.8977 | 0.9608 | 0.1023 | 0.0392 | 0.0016 | 0.6474 | 5.83 | 1.95 | 0.05 |
| FOR | 0.4483 | 0.5481 | 0.0625 | 0.9433 | 0.9375 | 0.0567 | 0.4519 | 0.5517 | 5.83 | 47.38 | 0.00 |
| SWCV | 0.4445 | 0.8258 | 0.1795 | 0.9595 | 0.8205 | 0.0405 | 0.1742 | 0.5555 | 5.83 | 19.77 | 0.00 |