data: E with 4 continuous variables

GxE: g[,1]\*e[,1],g[,1]\*e[,2],g[,1]\*e[,3],g[,2]\*e[,4],g[,3]\*e[,1],g[,3]\*e[,2],

g[,4]\*e[,4],g[,5]\*e[,1],g[,5]\*e[,2],g[,6]\*e[,4],g[,7]\*e[,1],g[,7]\*e[,2]

n=200, p=500, seq(0,1,by=0.01), rep=30

TCGA

coefficients: (0.1, 0.5)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | BL | | | BLSS | | |
| error |  | main | interaction | total | main | interaction | total |
| n(0,1) | Top100 | 3.3 | 1.63 | 4.93 | 3.07 | 3.53 | 6.6 |
| SD | 0.88 | 1.19 | 1.34 | 1.23 | 1.89 | 2.55 |
| t(2) | Top100 | 2.1 | 1 | 3.1 | 3.1 | 3.17 | 6.27 |
| SD | 1.21 | 1.05 | 1.60 | 1.94 | 2.59 | 4.05 |
| lognorm(0,2) | Top100 | 0.27 | 0.33 | 0.6 | 0.6 | 0.7 | 1.3 |
| SD | 0.58 | 0.61 | 0.93 | 0.97 | 0.88 | 1.58 |
| 90% n(0,1) + 10% Cauchy(0,1) | Top100 | 1.97 | 1.43 | 3.4 | 3.53 | 3.43 | 6.97 |
| SD | 1.63 | 1.30 | 2.59 | 1.63 | 2.28 | 3.44 |
| 80% n(0,1) + 20% Cauchy(0,1) | Top100 | 2.03 | 1.13 | 3.17 | 2.9 | 2.6 | 5.5 |
| SD | 1.47 | 1.28 | 2.34 | 1.81 | 2.09 | 3.54 |

top12, top22, top3, top4, top5

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | LADBL | | | LADBLSS | | |
| error |  | main | interaction | total | main | interaction | total |
| n(0,1) | Top100 | 3.5 | 2.27 | 5.77 | 4.7 | 5.9 | 10.6 |
| SD | 1.28 | 1.17 | 1.94 | 1.37 | 1.84 | 2.31 |
| t(2) | Top100 | 2.93 | 1.67 | 4.6 | 4.5 | 6.13 | 10.63 |
| SD | 1.11 | 1.18 | 1.79 | 1.33 | 1.91 | 2.75 |
| lognorm(0,2) | Top100 | 2.97 | 1 | 3.97 | 3.7 | 4.9 | 8.6 |
| SD | 1.25 | 0.74 | 1.33 | 1.56 | 2.25 | 3.16 |
| 90% n(0,1) + 10% Cauchy(0,1) | Top100 | 3.5 | 2.6 | 6.1 | 4.7 | 6.03 | 10.73 |
| SD | 1.17 | 1.30 | 1.81 | 1.32 | 2.03 | 2.64 |
| 80% n(0,1) + 20% Cauchy(0,1) | Top100 | 3.43 | 2.23 | 5.67 | 5.53 | 7 | 12.53 |
| SD | 1.41 | 1.07 | 1.47 | 1.50 | 2.07 | 3.09 |