**OVER-REPORTING SIMULATION RESULTS**

$minimum

[1] 516.3202

$estimate

[1] 0.35780899 3.26837607 0.55006625 0.07705583 0.80723958

$gradient

[1] 6.132268e-04 1.021951e-04 1.375611e-05 9.439418e-04 3.545892e-04

$hessian

[,1] [,2] [,3] [,4] [,5]

[1,] 1101.8109 193.35447 239.80938 339.10410 374.69115

[2,] 193.3545 38.22937 52.35945 76.53791 87.08708

[3,] 239.8094 52.35945 186.82955 -129.57370 146.73614

[4,] 339.1041 76.53791 -129.57370 1869.74775 107.83837

[5,] 374.6911 87.08708 146.73614 107.83837 383.68064

$code

[1] 2

$iterations

[1] 25

> rr$estimate - 1.64\*sqrt(diag(solve(rr$hessian)))

[1] 0.18488849 2.06257673 0.36065713 0.02830972 0.67122009

> rr$estimate + 1.64\*sqrt(diag(solve(rr$hessian)))

[1] 0.5307295 4.4741754 0.7394754 0.1258019 0.9432591

sqrt(diag(solve(rr$hessian)))

0.10543933 0.73524350 0.11549337 0.02972324 0.08293872

> mean(y); var (y)

[1] 7.005

[1] 13.65324

> mean(x)\*(1-p[3]\*(1-p[4]-2\*p[5]))

[1] 6.90615

> mean(x)\*(1-p[3]\*(1-p[4]-4\*p[5]))+mean(x)^2\*p[3]\*(1-p[3])\*(1-p[4]-2\*p[5])^2

[1] 14.30797

> acf ( y , plot = FALSE )

Autocorrelations of series ‘y’, by lag

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

1.000 0.192 0.126 0.037 0.041 -0.095 -0.112 -0.010 0.068 -0.038 -0.177 -0.039 -0.088 -0.026 -0.135 0.027 0.006 0.039 0.083 0.081

20 21 22 23

0.043 -0.012 -0.011 0.061

> ACF ( p=c( 0.3 , 3 , 0.7 , 0.1 , 0.8 ) , k=1)

[1] 0.2182989

> ACF ( p=c( 0.3 , 3 , 0.7 , 0.1 , 0.8 ) , k=2)

[1] 0.06548968

> ACF ( p=c( 0.3 , 3 , 0.7 , 0.1 , 0.8 ) , k=3)

[1] 0.0196469

**UNDER-REPORTING SIMULATION RESULTS**

$minimum

[1] 451.1058

$estimate

[1] 0.51835205 3.05858224 0.73538287 0.19516209 0.07836872

$gradient

[1] 1.208491e-04 2.795168e-05 2.580691e-05 -9.197265e-05 -8.066081e-05

$hessian

[,1] [,2] [,3] [,4] [,5]

[1,] 944.2936 148.26261 -449.34962 552.53025 941.2717

[2,] 148.2626 24.62997 -67.67834 82.53575 136.9864

[3,] -449.3496 -67.67834 406.72801 -248.37883 -721.0581

[4,] 552.5303 82.53575 -248.37883 1443.12430 1898.9521

[5,] 941.2717 136.98643 -721.05810 1898.95212 3872.6397

$code

[1] 1

$iterations

[1] 25

> rr$estimate - 1.64\*sqrt(diag(solve(rr$hessian)))

[1] 0.26350162 1.61412054 0.58938562 0.11133837 0.02281658

> rr$estimate + 1.64\*sqrt(diag(solve(rr$hessian)))

[1] 0.7732025 4.5030440 0.8813801 0.2789858 0.1339209

> sqrt(diag(solve(rr$hessian)))

[1] 0.15539660 0.88076933 0.08902271 0.05111203 0.03387326

> mean(y); var (y)

[1] 3.335

[1] 7.520377

> mean(x)\*(1-p[3]\*(1-p[4]-2\*p[5]))

[1] 3.4017

> mean(x)\*(1-p[3]\*(1-p[4]-4\*p[5]))+mean(x)^2\*p[3]\*(1-p[3])\*(1-p[4]-2\*p[5])^2

[1] 6.823306

> acf ( y , plot = FALSE )

Autocorrelations of series ‘y’, by lag

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

1.000 0.163 0.101 0.073 -0.008 -0.009 0.027 -0.072 -0.031 0.202 0.097 0.139 0.154 0.049 0.002 0.033 -0.019 -0.066 -0.076 -0.123

20 21 22 23

-0.024 0.065 0.003 0.013

> ACF ( p=c( 0.5 , 3 , 0.7 , 0.2 , 0.1 ) , k=1)

[1] 0.1433197

> ACF ( p=c( 0.5 , 3 , 0.7 , 0.2 , 0.1 ) , k=2)

[1] 0.07165985

> ACF ( p=c( 0.5 , 3 , 0.7 , 0.2 , 0.1 ) , k=3)

[1] 0.03582993