

Check sgmr2

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#-----  
# This file is used to  
# 1.check  $\sigma_{\{r\}}^2$   
# Last updated date: 7/11/2017  
#-----  
  
##set other parameters equal their true values  
eta=eta_sim  
v=v_sim  
beta=beta_sim  
sgm2=sgm2_sim  
E=E_sim  
c=c_sim  
b=b_sim  
e=e_sim  
X=X_sim    ##rename the simulated complete data  $X_{\{it\}}$   
  
##sample  $\sigma_{\{r\}}^2$   
shape_sgmr2=(n/2)+sgmr2_pri  
scale_sgmr2=(1/2)*sum(b2)+sgmr2_pri  
sgmr2=rgamma(n=1000, a=shape_sgmr2, b=scale_sgmr2)  
sgmr2  
  
## [1] 1.0825605 0.9908776 1.3131934 1.0198823 1.1592272 1.2351347  
## [7] 0.9118563 1.1261333 1.0149489 0.9395462 0.9407603 1.2822868  
## [13] 1.0982466 0.8602407 1.1067930 1.0612865 0.8620207 1.1014294  
## [19] 0.8810230 0.9799390 1.0596070 1.1308153 1.2847430 0.8208132  
## [25] 1.0498717 0.9442399 0.8649175 1.1978287 0.8290734 1.0385438  
## [31] 1.3082146 0.8727643 1.1211091 1.0502897 1.0052452 1.0856295  
## [37] 1.4692712 0.9624216 1.0955918 0.9949048 1.0485907 1.1298101  
## [43] 1.2187040 1.0954302 1.1382529 1.0562934 1.0737660 0.9551253  
## [49] 0.9645290 0.8441502 0.9318832 0.8605902 0.8904032 1.1245894  
## [55] 1.0786087 0.9608022 0.9676382 0.7567729 1.0487917 0.8592400  
## [61] 1.1657283 1.0560239 1.1900699 0.9210168 1.3334785 0.8368854  
## [67] 1.0179759 1.0658927 1.0777268 0.8945475 1.3600617 1.2723545  
## [73] 1.1237919 0.8150382 0.9983898 1.2647977 1.0473525 0.8708236  
## [79] 1.0511950 0.8908373 1.0000070 0.8769404 1.0332884 1.0186683  
## [85] 1.3158820 0.8192487 0.9821758 1.0617636 0.9936345 0.9670137  
## [91] 1.3368557 0.8483915 0.9610886 0.9807582 0.7928410 0.9567690  
## [97] 0.8604843 1.0534010 1.0236422 0.8885049 0.9021541 1.0733702  
## [103] 0.9243342 0.9034940 0.8484399 1.0422508 0.9363142 1.0352893  
## [109] 0.8337800 1.1483967 1.0670495 1.1105861 1.0025830 1.1204325  
## [115] 1.0260409 0.9645304 1.1082713 1.1015618 1.2738320 0.9028710  
## [121] 0.9372752 0.8515910 0.9212584 1.1463069 1.0204663 1.0036875  
## [127] 1.1218854 1.1210134 0.9343452 1.1099592 1.0631233 1.0731511  
## [133] 1.0315323 0.8874232 1.1486004 1.3310901 0.9463609 0.8958772  
## [139] 1.2298552 0.9612118 0.9942836 0.8661514 0.7730658 0.9530138  
## [145] 0.8684654 1.1231405 1.0033378 1.1458916 1.1406886 1.0946222  
## [151] 0.7300072 0.9727991 0.9486385 0.9999223 0.8571855 1.3457958  
## [157] 0.7837927 0.9884540 0.9979783 0.7787639 1.0565899 1.3077017  
## [163] 0.8014650 1.0996126 0.8300240 0.8926165 0.7566168 1.0027165
```

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## [169] 1.0362002 1.2487020 0.7491068 0.9053071 0.8355575 0.8065654
## [175] 1.1915297 0.9797856 1.0436403 1.2397466 1.1052183 1.0110516
## [181] 1.0315222 1.2190382 1.0274122 1.1752209 0.7882871 0.9688505
## [187] 1.0317375 0.9222451 0.9896000 1.1442890 1.2848550 1.1205916
## [193] 1.0397669 0.8363465 1.1564525 0.8972034 1.0829812 1.1173059
## [199] 0.8828395 0.9187721 1.1591533 1.0956099 1.0125673 0.9195769
## [205] 1.2409475 0.8333860 1.3507675 0.9394169 0.9996920 1.1394467
## [211] 1.1419893 1.0141471 0.8728981 0.7356749 0.9718185 1.1183168
## [217] 1.0234993 1.2601085 1.2105504 1.2167069 1.3096468 0.9661596
## [223] 1.1828204 1.0536625 1.0604776 0.9165279 1.0582196 1.0348523
## [229] 0.9294500 0.8869211 0.8924983 0.8536141 0.8627622 1.1408583
## [235] 0.8021370 1.0294251 0.8779010 1.1108215 1.0614223 1.1393227
## [241] 0.8204610 0.9153599 0.9682481 1.1804929 1.0459645 0.8869405
## [247] 0.9193804 0.9243303 1.0422035 1.1717239 1.0502801 0.9818237
## [253] 0.8434550 1.0125607 0.8404898 0.9331832 0.9609062 1.1963071
## [259] 0.8700719 1.0035301 1.1261641 0.9668729 1.0129601 0.9473533
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## [283] 1.1118708 1.0345260 1.2689074 0.9881125 1.1377375 0.9897699
## [289] 1.2798492 1.0319154 0.9438246 1.0368193 0.9839818 0.8674814
## [295] 0.9265509 0.9585663 1.1167386 1.3369985 1.0228458 1.2419947
## [301] 1.2467248 0.9719217 1.0286473 0.7440105 1.1369833 0.8435910
## [307] 1.0972156 1.4687450 1.0812826 1.1597012 1.0320599 0.7394773
## [313] 0.9543301 1.2437650 1.0743351 1.1648215 1.0458466 0.8961944
## [319] 0.9163835 1.0804279 1.2279860 1.1103492 0.9913977 1.2059584
## [325] 0.8927162 0.8661410 1.1691378 0.8613691 1.1520995 1.0675619
## [331] 0.9906196 1.0620479 1.0978267 0.9099347 1.0579918 1.1328923
## [337] 0.7771564 0.8642926 0.8662167 1.1138006 1.2151933 1.0013040
## [343] 1.2227482 0.8475268 1.2257608 1.2211162 1.0763624 1.2745167
## [349] 1.3245083 1.1805312 0.8647059 0.9006014 1.2140474 0.9390807
## [355] 0.8796406 1.1359141 1.0959000 0.8285893 0.9462492 0.8503311
## [361] 0.9697443 0.7593441 0.8729076 0.9392432 0.8963402 0.9107851
## [367] 1.2142198 0.9754537 1.0242053 0.9905111 1.0719138 0.9351870
## [373] 0.9783681 1.3704240 1.1758601 1.0388641 0.9140226 1.2336287
## [379] 1.1141659 0.9170913 1.1013579 1.3102568 0.9045787 1.0474329
## [385] 0.8274545 1.0562962 1.1039693 1.0893779 0.9725943 1.1171367
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## [397] 0.9814674 0.9668569 0.9491979 0.8157407 1.2853268 1.0572517
## [403] 1.0614747 0.7512562 1.0520248 0.8997881 1.1486621 1.0139186
## [409] 1.1587723 0.9277115 1.1550403 0.8938043 1.0018562 1.1836859
## [415] 0.9081217 1.0043253 0.8951761 1.0850945 0.9273425 0.9435324
## [421] 1.0009820 1.1105514 1.0264609 1.0330373 0.9910362 1.1071126
## [427] 0.8939260 1.4345775 0.9839716 1.0938602 1.0092205 0.9146433
## [433] 0.8464969 0.9184275 1.1475929 1.0885814 0.9215696 1.0038607
## [439] 1.2299329 0.9520775 1.1960120 1.2016767 1.2159990 1.0735366
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## [451] 1.2215852 1.1599030 1.0602636 0.8614883 0.9328239 1.0054643
## [457] 1.1087233 1.0196072 0.9914455 1.1300245 0.9189187 0.7875150
## [463] 1.2380910 1.1585293 0.8038158 1.0432719 0.9825319 0.9384416
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## [475] 0.9326166 1.0797168 1.2869977 1.1774791 0.8378447 1.1001575
## [481] 1.0422345 1.0412599 0.9723609 1.1066802 0.9673474 0.9283627
## [487] 1.0782554 1.1772008 1.0918897 1.0677637 1.1642311 1.0324064

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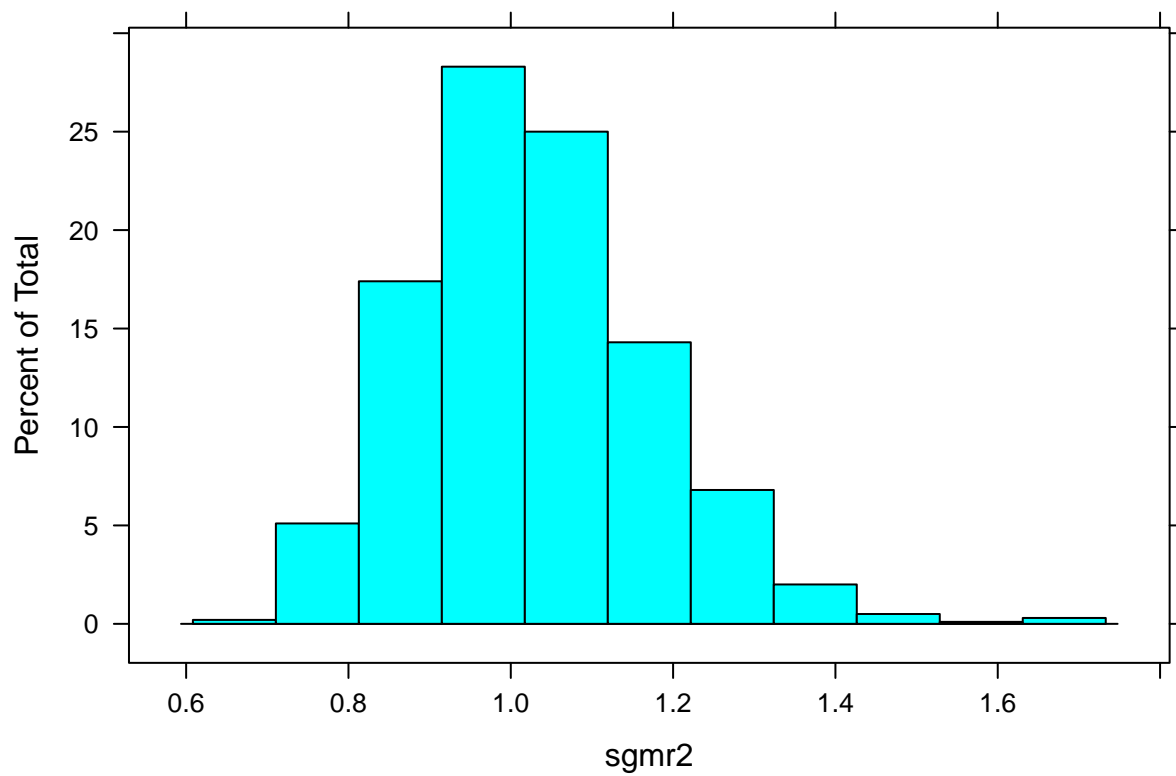
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## [493] 1.0586762 0.8240732 1.1355539 1.0272378 1.0968093 0.9020490
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## [583] 1.1219185 1.0085740 1.0453925 1.0870585 1.0790107 0.8659501
## [589] 0.7945111 0.8626440 0.9191341 0.9964807 0.9153531 0.8679599
## [595] 1.1406553 1.1793120 1.0002649 1.3809335 0.9572518 1.0308706
## [601] 0.9910343 0.9167840 0.9660540 1.0793593 1.0783246 1.0478590
## [607] 0.9810463 0.8530745 1.0935072 1.2547780 0.9742393 1.0015396
## [613] 1.0394358 1.0326695 1.2474211 1.0727590 1.2779907 1.2320076
## [619] 0.7946330 0.8225094 0.7795619 0.8892130 1.0612951 1.2026517
## [625] 0.9584947 1.0796218 1.0163835 1.0266665 0.9233251 0.9515679
## [631] 0.9024861 1.0868191 1.0093610 1.2163788 0.9831769 0.9070827
## [637] 0.9130111 0.7881286 0.9630040 1.1166602 0.9852796 1.0165884
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## [703] 1.0801232 0.9502587 0.9444443 0.9535423 1.0763939 1.0210090
## [709] 0.9849594 0.8869035 1.2916301 1.0547028 1.2931726 0.9439923
## [715] 0.9251338 1.1661625 0.8564941 1.1210421 0.9353518 1.1781807
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## [733] 0.9405617 1.1048257 0.9130951 1.1745008 0.9351159 1.6528935
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## [751] 1.0650829 1.4465871 1.0103303 1.0032479 0.8879328 0.9741267
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## [775] 1.0791014 0.9023650 0.8422967 1.2329645 0.6499630 0.9809289
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## [793] 1.2165386 0.9659194 1.0254036 0.9084011 1.1837215 1.2485081
## [799] 1.1466653 0.9823410 1.0651865 0.8550620 0.9976641 1.0331571
## [805] 1.1347189 1.0236957 0.9515723 0.9961958 1.1347732 1.3425035
## [811] 1.1533984 1.0309814 0.9735868 0.9202691 1.3115377 1.2473083

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## [817] 0.9367745 1.3321491 0.9265729 1.1159121 1.3623484 1.3806259
## [823] 1.3178687 0.9759964 1.1667259 0.8511114 1.0078640 1.0216518
## [829] 0.8866731 1.0289499 1.1495514 0.9882334 1.3180405 1.0633540
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## [865] 1.6914068 0.8943459 0.9943545 0.9339153 1.0505237 0.9319794
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## [877] 0.8045665 0.8868402 0.8094253 1.0898893 1.0790889 0.9834273
## [883] 0.8452593 1.2060402 0.9575178 1.1778237 0.8577755 1.0142995
## [889] 0.9209343 0.9840869 1.0478117 0.9352783 1.2279415 1.0179796
## [895] 1.0441102 1.0916601 0.9337551 1.0063071 1.0950306 0.9655603
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## [907] 0.9723766 1.1131845 0.8299300 0.8612038 0.9993069 0.9439981
## [913] 1.0473713 0.9886673 0.8662778 1.1184076 1.0765170 1.1338476
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## [925] 0.9946541 0.9625330 1.0264551 1.0066522 1.0516901 0.9476037
## [931] 0.9061822 1.0178174 0.9286557 0.9074608 0.9989538 1.0543461
## [937] 1.2741832 0.9947036 0.9174855 1.1483599 1.1929160 0.8385674
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## [967] 0.9544091 0.9639860 0.8658480 1.1069810 1.0398876 0.9626040
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## [979] 1.0150565 1.0930886 1.2285315 0.9135340 1.2333060 1.0514774
## [985] 1.1402237 1.0334430 1.2185917 0.8157790 0.8556174 0.9752721
## [991] 1.0395009 1.0978205 0.9165010 1.0399090 1.1598193 1.0192082
## [997] 0.7707253 0.8151892 1.0332784 0.8047226
```

```
##histogram and traceplot
histogram(sgmr2)
```



```
traceplot(x=as.mcmc(sgmr2), ylab="sgmr2")
```

