fitCTVARMx: External Tests

Ivan Jacob Agaloos Pesigan

Tests

```
#> test-external-fitCTVARMx-fit-ct-var-id-mx-sigma-diag
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:   -535.979545303293
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-535.97955 (started at -495.99832)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.286419758609655,0.895144996218525,-0.0284412423732209,-0.0082640609232989,-3.08775726898311e-1
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:   -561.070716085788
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-561.07072 (started at -535.26324)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.816068043984246,1.47244363457974,-0.638888238600876,0.372705117936146,-1.81489687102436,1.109'
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
```

```
#>
#>  Lowest minimum so far:    -529.082648162144
#>
#> Solution found


#>
#>  Solution found!   Final fit=-529.08265 (started at -479.46733)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.810295084841163,0.37530637164248,-1.04076109315336,0.204110779103599,-0.453115249664412,1.1922
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:    -560.612123099411
#>
#> Solution found


#>
#>  Solution found!   Final fit=-560.61212 (started at -537.64217)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.778335518500668,0.831095092290686,-0.207879892147311,-0.0650537129275512,-0.321991140206117,0.
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:    -524.94033866583
#>
#> Solution found


#>
#>  Solution found!   Final fit=-524.94034 (started at -496.403)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> -0.346744768682544,0.658770854369149,-0.086874188707888,0.110578141833681,-0.415205685165933,0.82
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:    -512.634087885478
```

```
#>
#> Solution found


#>
#>  Solution found!    Final fit=-512.63409 (started at -444.71109)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.55128594759575,0.761763101404336,-0.198710838385083,-0.355055492596023,-0.566584315572436,0.72
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:    -547.990828868771
#>
#> Solution found


#>
#>  Solution found!    Final fit=-547.99083 (started at -488.54129)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.102312429278226,0.942780876960757,-0.414655497055917,-0.24104564728416,-0.850071497419234,0.65
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:    -542.960696002023
#>
#> Solution found


#>
#>  Solution found!    Final fit=-542.9607 (started at -464.98637)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> -0.20889468718131,1.03008309264961,-0.673263442423876,-0.0471430350633757,-0.552485551212291,0.86
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:    -544.500050620907
#>
#> Solution found
```

```
#>
#>  Solution found!    Final fit=-544.50005 (started at -504.33797)   (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.372334980581452,1.74757424131736,-0.463795442453169,-0.0261470039428471,-1.38292940485458,1.29
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:    -558.031184104828
#>
#> Solution found
```

```
#>
#>  Solution found!    Final fit=-558.03118 (started at -456.43272)   (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -1.76198015722375,1.24886373827479,0.00234347786462007,0.763068443644726,-0.758216525285823,0.410
#>
#> Means of the estimated paramaters per individual.
#>      phi_11       phi_21       phi_31       phi_12       phi_22       phi_32
#> -0.60346714  0.99638260 -0.37509264  0.07077535 -0.71154962  0.87403070
#>      phi_13       phi_23       phi_33    sigma_11    sigma_22    sigma_33
#> -0.08404499 -0.04892543 -0.89351644  0.09710037  0.10292187  0.09831419
#>
#> Estimated paramaters per individual.
#>          phi_11    phi_21       phi_31       phi_12        phi_22     phi_32
#>  [1,] -0.2864198 0.8951450 -0.028441242 -0.008264061 -3.087757e-14 0.7522675
#>  [2,] -0.8160680 1.4724436 -0.638888239  0.372705118 -1.814897e+00 1.1097920
#>  [3,] -0.8102951 0.3753064 -1.040761093  0.204110779 -4.531152e-01 1.1922940
#>  [4,] -0.7783355 0.8310951 -0.207879892 -0.065053713 -3.219911e-01 0.9113343
#>  [5,] -0.3467448 0.6587709 -0.086874189  0.110578142 -4.152057e-01 0.8250235
#>  [6,] -0.5512859 0.7617631 -0.198710838 -0.355055493 -5.665843e-01 0.7264666
#>  [7,] -0.1023124 0.9427809 -0.414655497 -0.241045647 -8.500715e-01 0.6574175
#>  [8,] -0.2088947 1.0300831 -0.673263442 -0.047143035 -5.524856e-01 0.8643121
#>  [9,] -0.3723350 1.7475742 -0.463795442 -0.026147004 -1.382929e+00 1.2911569
#> [10,] -1.7619802 1.2488637  0.002343478  0.763068444 -7.582165e-01 0.4102427
#>          phi_13       phi_23     phi_33    sigma_11   sigma_22    sigma_33
#>  [1,]  0.08972252 -0.57112310 -0.7928190 0.09260981 0.11268120 0.08862439
#>  [2,] -0.19328161  0.39175848 -0.6372763 0.07901290 0.10805787 0.10499608
#>  [3,]  0.04816415 -0.16981551 -1.4175193 0.10627541 0.12259931 0.08605712
#>  [4,]  0.07018085  0.07615759 -0.7164280 0.09066660 0.09443070 0.09134324
#>  [5,] -0.03730923 -0.55992842 -0.8478083 0.12613772 0.10134113 0.08618941
#>  [6,]  0.33619397  0.04325559 -0.7512464 0.10530428 0.09255979 0.12505678
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```
#>   [7,] -0.12195616 -0.44584338 -0.5712409 0.09375297 0.09432193 0.09468333
#>   [8,]  0.01495990  0.09131346 -1.2149274 0.10492951 0.09940646 0.08756682
#>   [9,] -0.04044610  0.52486114 -1.2188836 0.07154667 0.11069829 0.12930534
#>  [10,] -1.00667823  0.13010990 -0.7670152 0.10076783 0.09312197 0.08931941
#> Test passed

#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:    -535.979545303292
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-535.97955 (started at -516.0749)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> -0.286419759477208,0.89514526877191,-0.0284412598060402,-0.00826412280061554,2.2250738585072e-308
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:    -561.070716085796
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-561.07072 (started at -550.31747)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.816068033419094,1.4724432933283,-0.638887851446413,0.372705278098248,-1.8148964718354,1.109791
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:    -529.082648162143
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-529.08265 (started at -515.49081)  (1 attempt(s):
1 valid, 0 errors)
```

```
#>  Start values from best fit:
#> -0.810294783906773,0.375306460017436,-1.04076108582465,0.204110751549053,-0.45311520868845,1.1922
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:   -560.612123099413
#>
#> Solution found


#>
#>  Solution found!   Final fit=-560.61212 (started at -552.13253)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.778335633643543,0.831095158757084,-0.207880116253813,-0.0650535813732113,-0.321991284424586,0.
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:   -524.94033866583
#>
#> Solution found


#>
#>  Solution found!   Final fit=-524.94034 (started at -515.48459)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.346744737271842,0.658770957119251,-0.0868742779570846,0.110578078336794,-0.415205716415459,0.8
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:   -512.634087885479
#>
#> Solution found


#>
#>  Solution found!   Final fit=-512.63409 (started at -504.20914)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.551285939569459,0.761763084271664,-0.19871080047585859,-0.355055595541156,-0.566584200583811,0.7
#> Running CTVAR with 12 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:   -547.99082886877
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-547.99083 (started at -540.95527)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.102312493268101,0.942780770618847,-0.414655459662668,-0.241045604517094,-0.850071391943233,0.6
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:   -542.960696002028
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-542.9607 (started at -534.0984)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> -0.208894894724266,1.0300830921788,-0.673263392600758,-0.0471430013244983,-0.552485559825697,0.86
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:   -544.500050620922
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-544.50005 (started at -529.27184)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.372334812098574,1.74757409195524,-0.463795380066834,-0.0261471229672713,-1.382929380614,1.2911
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
```

```
#>
#>   Lowest minimum so far:     -558.031184104825
#>
#> Solution found
```

```
#>
#>   Solution found!    Final fit=-558.03118 (started at -540.5606)   (1 attempt(s):  1
valid, 0 errors)
#>   Start values from best fit:
#> -1.7619792495282,1.24886330640017,0.0023436197205935,0.763067929811907,-0.758216149668633,0.4102..
#>
#> Means of the estimated paramaters per individual.
#>       phi_11        phi_21        phi_31        phi_12        phi_22        phi_32
#> -0.60346703  0.99638255 -0.37509260  0.07077530 -0.71154954  0.87403071
#>       phi_13        phi_23        phi_33       sigma_11      sigma_22      sigma_33
#> -0.08404492 -0.04892544 -0.89351640  0.09710037  0.10292186  0.09831419
#>
#> Estimated paramaters per individual.
#>            phi_11     phi_21       phi_31        phi_12          phi_22      phi_32
#>   [1,] -0.2864198 0.8951453 -0.02844126 -0.008264123   2.225074e-308 0.7522675
#>   [2,] -0.8160680 1.4724433 -0.63888785  0.372705278    -1.814896e+00 1.1097913
#>   [3,] -0.8102948 0.3753065 -1.04076109  0.204110752    -4.531152e-01 1.1922940
#>   [4,] -0.7783356 0.8310952 -0.20788012 -0.065053581    -3.219913e-01 0.9113345
#>   [5,] -0.3467447 0.6587710 -0.08687428  0.110578078    -4.152057e-01 0.8250235
#>   [6,] -0.5512859 0.7617631 -0.19871080 -0.355055596    -5.665842e-01 0.7264667
#>   [7,] -0.1023125 0.9427808 -0.41465546 -0.241045605    -8.500714e-01 0.6574175
#>   [8,] -0.2088949 1.0300831 -0.67326339 -0.047143001    -5.524856e-01 0.8643122
#>   [9,] -0.3723348 1.7475741 -0.46379538 -0.026147123    -1.382929e+00 1.2911573
#> [10,] -1.7619792 1.2488633  0.00234362  0.763067930    -7.582161e-01 0.4102427
#>            phi_13       phi_23      phi_33     sigma_11    sigma_22    sigma_33
#>   [1,]   0.08972260 -0.57112322 -0.7928190 0.09260981 0.11268121 0.08862439
#>   [2,] -0.19328145   0.39175840 -0.6372761 0.07901290 0.10805787 0.10499604
#>   [3,]   0.04816393 -0.16981557 -1.4175192 0.10627541 0.12259930 0.08605711
#>   [4,]   0.07018079   0.07615775 -0.7164282 0.09066661 0.09443070 0.09134325
#>   [5,] -0.03730923 -0.55992841 -0.8478082 0.12613771 0.10134113 0.08618940
#>   [6,]   0.33619410   0.04325555 -0.7512465 0.10530428 0.09255979 0.12505679
#>   [7,] -0.12195610 -0.44584326 -0.5712410 0.09375296 0.09432192 0.09468333
#>   [8,]   0.01496003   0.09131341 -1.2149276 0.10492951 0.09940647 0.08756682
#>   [9,] -0.04044612   0.52486127 -1.2188832 0.07154667 0.11069828 0.12930536
#> [10,] -1.00667772   0.13010968 -0.7670151 0.10076782 0.09312197 0.08931940
#> Test passed
#> test-external-fitCTVARMx-fit-ct-var-id-mx-sigma-full-iota
#> Running CTVAR with 21 parameters
#>
#> Beginning initial fit attempt
```

```
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:    -544.478694984783
#>  Not all eigenvalues of the Hessian are positive:  5732114.80891431, 4485877.57111917,
3863675.35250955, 38016.2420781636, 20517.5662598474, 17537.4923262942, 5366.38408900621,
3561.39290359617, 2070.40248712927, 364.120146117619, 230.027405684701, 190.043065566761,
43.1628026863201, 27.081183699738, 21.1631675113143, 18.4759628828574, 11.3233810497169,
9.72703374050597, 4.65829192413566e-14, -2.09982564094943e-14, -3.81078093618981e-13
#>
#> Beginning fit attempt 1 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:    -544.478694984843
#>
#> Solution found
```

```
#>
#>  Solution found!    Final fit=-544.47869 (started at 34.488312)   (2 attempt(s):  2
valid, 0 errors)
#>  Start values from best fit:
#> -0.323004386825247,0.961809967890977,0.012773170698661,0.0168089453766794,2.2250738585072e-308,0.
#> Running CTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:    -562.517817572177
#>  Not all eigenvalues of the Hessian are positive:  7719757.51447015, 4021532.53981664,
3580432.1247707, 24784.7391006264, 22795.9603061863, 17970.7034283455, 5621.07478928948,
3718.93377589892, 2927.29093251332, 44.2726839509315, 38.582797325798, 31.0035834601836,
19.3942931678282, 17.2343788838342, 14.277383628681, 3.56781296913575, 3.21475294540012,
2.39237437159643, -5.2572704262411e-14, -1.0682093773118e-12, -2.79486352475832e-12
#>
#> Beginning fit attempt 1 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:    -562.517817572177
#>  Not all eigenvalues of the Hessian are positive:  7719757.51537783, 4021532.54533324,
3580432.12450262, 24784.7392889151, 22795.9594057187, 17970.704076774, 5621.0796096338,
3718.93577488688, 2927.29312821236, 44.2740727557069, 38.5840334004629, 31.0039236524566,
19.3960203338617, 17.2372326095167, 14.2757426228678, 3.56898763506208, 3.21765844088181,
2.39274143764652, 4.30595694197845e-14, -3.85350417178436e-16, -5.97803753308539e-12
#>
#> Beginning fit attempt 2 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

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#>  Not all eigenvalues of the Hessian are positive:  7719757.51537783, 4021532.54533324,
#> 3580432.12450262, 24784.7392889151, 22795.9594057187, 17970.704076774, 5621.0796096338,
#> 3718.93577488688, 2927.29312821236, 44.2740727557069, 38.5840334004629, 31.0039236524566,
#> 19.3960203338617, 17.2372326095167, 14.2757426228678, 3.56898763506208, 3.21765844088181,
#> 2.39274143764652, 4.30595694197845e-14, -3.85350417178436e-16, -5.97803753308539e-12
#>
#> Beginning fit attempt 3 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 4 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 5 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 6 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 7 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 8 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 9 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 10 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 11 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 12 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 13 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 14 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 15 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 16 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 17 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 18 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 19 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 20 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 21 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 22 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 23 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 24 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 25 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 26 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 27 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 28 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 29 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 30 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 31 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 32 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 33 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 34 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 35 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 36 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 37 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 38 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 39 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 40 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 41 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  7719746.91073248, 4021258.24022405,
3580453.6142099, 24784.6972916176, 22798.4285226473, 17970.6137484996, 5621.25841754957,
3719.23360458331, 2927.60874738125, 44.2746778692617, 38.592192737293, 31.0042609338323,
19.3919356386852, 17.2371501641094, 14.276687574684, 3.56735932051587, 3.21752394043106,
2.39106034118472, 4.23171451401197e-13, 4.53598492330121e-14, -4.99772207256111e-14
#>
#> Beginning fit attempt 42 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 43 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 44 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 45 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 46 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>   Not all eigenvalues of the Hessian are positive:  7719729.918423, 4021525.4054056,
3580440.32248012, 24784.6950218099, 22795.922612445, 17970.7107603994, 5621.05419040345,
3718.93185571146, 2927.28705485768, 44.2634990002782, 38.5946210814912, 31.0015856588915,
19.3845232851309, 17.2316648889586, 14.2770079041546, 3.55768790225583, 3.20589966748015,
2.39119645562914, -6.04096393918453e-14, -8.63680084561521e-14, -2.25130408675706e-12
#>
#> Beginning fit attempt 47 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 48 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 49 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 50 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 51 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 52 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 53 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 54 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 55 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 56 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 57 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 58 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 59 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 60 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 61 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 62 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 63 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 64 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 65 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 66 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 67 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 68 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 69 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 70 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 71 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 72 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:   -562.517817572564
```

```
#>  Not all eigenvalues of the Hessian are positive:  7719733.40684317, 4021544.06604149,
3580447.18858002, 24784.6749655074, 22795.9539048925, 17970.6696667966, 5621.04963235299,
3718.91539861636, 2927.28445247134, 44.2569922735794, 38.5935115474287, 30.9987812220849,
19.383543629098, 17.2291048039751, 14.2701381098459, 3.55646130268772, 3.20489392005784,
2.38765711552531, 3.84032169835379e-12, -3.61829857709822e-14, -6.00701201452495e-13
#>
#> Beginning fit attempt 73 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:   -562.517817572565
#>  Not all eigenvalues of the Hessian are positive:  7719733.41091727, 4021544.06722371,
3580447.19391548, 24784.6793162452, 22795.9531997084, 17970.6728468481, 5621.05648195133,
3718.93106446613, 2927.29170697169, 44.2739407632353, 38.5850147250142, 31.0033802292794,
19.3918587623056, 17.237370905473, 14.2767341974352, 3.56606337726857, 3.21493585515021,
2.3935146537328, 5.92078789151952e-14, -3.79509360197764e-13, -6.63023052245105e-13
#>
#> Beginning fit attempt 74 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  7719733.41091727, 4021544.06722371,
3580447.19391548, 24784.6793162452, 22795.9531997084, 17970.6728468481, 5621.05648195133,
3718.93106446613, 2927.29170697169, 44.2739407632353, 38.5850147250142, 31.0033802292794,
19.3918587623056, 17.237370905473, 14.2767341974352, 3.56606337726857, 3.21493585515021,
2.3935146537328, 5.92078789151952e-14, -3.79509360197764e-13, -6.63023052245105e-13
#>
#> Beginning fit attempt 75 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 76 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 77 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 78 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 79 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#> Solution found


#>
#>  Solution found!    Final fit=-562.51782 (started at 3.4673123)  (80 attempt(s):
9 valid, 71 errors)
#>  Start values from best fit:
#> -0.821788247111823,1.45822066615769,-0.739208107821498,0.387377803118465,-1.81654345811541,1.1455
#> Running CTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:    -530.128797998671
#>  Not all eigenvalues of the Hessian are positive:  6318947.981377, 4211283.06961938,
3720142.15266799, 21998.0927735434, 17317.0681335994, 14747.5712307323, 3056.68862390187,
2816.7356350534, 2749.35875405562, 235.737094255465, 180.037022211059, 154.23040663675,
18.3124960661982, 14.6479573049612, 12.9038046174011, 7.2525897012379, 5.27889266607628,
4.77786907799829, 2.04222785476384e-12, 1.74174666179228e-13, -2.60411614766013e-13
#>
#> Beginning fit attempt 1 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  6318947.981377, 4211283.06961938,
3720142.15266799, 21998.0927735434, 17317.0681335994, 14747.5712307323, 3056.68862390187,
2816.7356350534, 2749.35875405562, 235.737094255465, 180.037022211059, 154.23040663675,
18.3124960661982, 14.6479573049612, 12.9038046174011, 7.2525897012379, 5.27889266607628,
4.77786907799829, 2.04222785476384e-12, 1.74174666179228e-13, -2.60411614766013e-13
#>
#> Beginning fit attempt 2 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 3 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 4 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 5 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 6 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 7 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 8 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 9 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 10 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 11 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 12 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 13 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 14 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 15 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 16 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 17 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 18 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 19 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 20 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 21 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 22 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 23 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 24 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 25 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 26 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 27 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 28 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 29 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 30 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 31 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 32 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 33 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 34 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 35 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 36 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 37 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 38 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 39 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 40 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 41 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 42 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 43 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 44 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 45 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 46 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  6318946.11447624, 4211283.8924508,
3720140.55736519, 21998.0913256724, 17317.0714469085, 14747.5726606049, 3056.68955524557,
2816.74046960686, 2749.36194669962, 235.73638120431, 180.037034167415, 154.234991047055,
18.3174999819884, 14.6582215597891, 12.9125951288851, 7.26243125698716, 5.28822294002096,
4.77873850769439, 1.05402263717677e-12, 2.42980814061586e-15, -5.48247882690194e-13
#>
#> Beginning fit attempt 47 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 48 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 49 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 50 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 51 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  6318950.69270798, 4211285.19873316,
3720143.20656788, 21998.1069938103, 17317.0719250364, 14747.5811096716, 3056.69307138796,
2816.74105337386, 2749.3614557711, 235.738878016487, 180.035953824349, 154.232145485848,
18.3169630658367, 14.6644915011485, 12.9096213810974, 7.25521961063543, 5.283751919316,
4.77774125413665, 1.68972745508468e-13, -1.15027870137296e-14, -2.1753302788377e-13
#>
#> Beginning fit attempt 52 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 53 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 54 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 55 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 56 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 57 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 58 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 59 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 60 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 61 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 62 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  6318948.23280186, 4211285.44092493,
3720146.97011402, 21998.0990024898, 17317.0764507514, 14747.5842315354, 3056.68672241844,
2816.73584555406, 2749.36003840665, 235.735605406839, 180.034299640934, 154.231174936414,
18.3127507087837, 14.6565303733109, 12.9049653666619, 7.25640926544836, 5.27595514050808,
4.77269846372479, 4.17853235214273e-13, -3.69875828270027e-14, -2.43253518098036e-13
#>
#> Beginning fit attempt 63 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 64 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 65 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 66 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 67 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 68 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 69 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 70 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 71 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 72 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 73 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 74 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 75 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 76 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 77 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>   Not all eigenvalues of the Hessian are positive:  6318941.4041101, 4211287.2470961,
3720142.60709618, 21998.1006820365, 17317.0616441334, 14747.5886905171, 3056.69438224718,
2816.74315106381, 2749.36203619064, 235.740357002061, 180.03784549551, 154.230971272306,
18.3153283995162, 14.6568721397376, 12.9093515201043, 7.25523368059255, 5.2861188624255,
4.77766072532319, 3.49280191177634e-13, 3.30094997116483e-14, -3.10458286551431e-13
#>
#> Beginning fit attempt 78 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 79 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 80 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 81 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 82 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>   Not all eigenvalues of the Hessian are positive:  6318944.0219329, 4211285.68679805,
3720142.68133842, 21998.0975122615, 17317.08126808, 14747.5802743677, 3056.69231619894,
2816.73886855085, 2749.36224888346, 235.739188212585, 180.035143204254, 154.233678096978,
18.319186350834, 14.657865359502, 12.9143202715209, 7.25799512866815, 5.28833785766978,
4.7801819817629, 2.1073803099792e-12, 1.58085085548944e-13, -4.13557550457463e-14
#>
#> Beginning fit attempt 83 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 84 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 85 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 86 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 87 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 88 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 89 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 90 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 91 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 92 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 93 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 94 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 95 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>   Not all eigenvalues of the Hessian are positive:  6318951.26349047, 4211281.70129981,
3720139.02690019, 21998.1001881016, 17317.0445524598, 14747.5581767234, 3056.68837994845,
2816.73615539473, 2749.36390521568, 235.73863560215, 180.034990326005, 154.233562856426,
18.3177673804948, 14.663154473342, 12.9118121537435, 7.25723901938541, 5.28529335004271,
4.78025030268197, 1.43129989706702e-12, 1.38559974208156e-13, -1.79583125476266e-13
#>
#> Beginning fit attempt 96 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 97 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 98 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 99 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 100 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 101 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 102 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 103 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 104 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 105 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 106 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 107 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 108 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 109 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 110 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 111 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 112 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 113 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 114 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 115 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 116 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 117 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 118 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 119 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 120 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 121 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 122 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 123 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 124 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 125 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 126 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 127 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 128 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 129 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 130 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 131 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 132 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 133 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 134 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 135 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 136 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 137 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 138 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 139 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 140 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 141 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 142 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 143 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 144 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 145 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 146 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

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#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 147 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 148 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 149 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 150 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 151 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 152 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 153 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 154 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 155 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

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#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 156 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 157 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 158 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  6319052.38533056, 4211313.70743601,
3720259.19735353, 21998.4918544325, 17317.3825394482, 14747.7640848832, 3056.77841139277,
2816.8758088276, 2749.39726761563, 235.740399432202, 180.037389314538, 154.232588383551,
18.3175304664474, 14.6588777634032, 12.9101264265196, 7.25513426912212, 5.28529910907217,
4.77915509161014, 2.87997478170939e-13, -1.23218379136029e-14, -1.08841445588984e-12
#> 
#> Beginning fit attempt 159 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 160 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 161 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 162 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 163 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
```

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#>
#> Beginning fit attempt 164 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 165 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 166 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 167 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>   Not all eigenvalues of the Hessian are positive:  6318948.13486381, 4211283.82958909,
3720143.09613707, 21998.0924060859, 17317.0774500217, 14747.5746863578, 3056.68947046305,
2816.73780316059, 2749.36077658899, 235.73880127057, 180.03744229313, 154.231279551753,
18.3127880751113, 14.6518648693681, 12.9088984694944, 7.2534749319451, 5.28346365865002,
4.7818360184365, 5.89558270138735e-14, 4.09007751398223e-14, -4.1182935517446e-13
#>
#> Beginning fit attempt 168 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>   Not all eigenvalues of the Hessian are positive:  6318945.14248553, 4211281.96611771,
3720143.6367275, 21998.0888720504, 17317.0675532666, 14747.5749549388, 3056.69353765508,
2816.73567540109, 2749.3616498306, 235.73993228293, 180.035076305784, 154.229680488742,
18.3141233754419, 14.6582911511751, 12.9124038031109, 7.25478219217585, 5.28629645256882,
4.78021802966912, 4.30369373289482e-13, 2.14744983293298e-13, -7.1061767244827e-13
#>
#> Beginning fit attempt 169 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 170 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 171 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 172 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 173 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 174 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 175 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 176 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 177 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 178 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 179 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 180 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

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#>
#> Beginning fit attempt 181 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 182 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 183 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 184 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 185 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 186 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 187 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 188 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 189 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 190 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 191 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 192 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 193 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 194 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 195 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 196 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 197 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 198 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

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#>
#> Beginning fit attempt 199 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 200 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 201 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 202 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 203 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 204 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 205 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 206 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 207 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 208 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 209 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 210 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 211 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 212 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 213 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 214 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 215 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 216 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 217 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  6318952.74096617, 4211283.4927674,
3720141.60689026, 21998.1040601282, 17317.0744361361, 14747.5729288849, 3056.69348371306,
2816.73950170465, 2749.36980662805, 235.738615626093, 180.035765099083, 154.23602284542,
18.3194612326293, 14.6599189846745, 12.91200508671, 7.2589969719924, 5.29121518724205,
4.78495738812447, 3.77357612262229e-13, -6.35570600140837e-14, -1.88067808436296e-13
#>
#> Beginning fit attempt 218 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 219 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 220 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 221 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 222 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 223 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 224 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 225 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 226 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 227 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 228 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 229 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 230 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  6318942.11088013, 4211251.55312711,
3720140.53252751, 21998.0077971138, 17317.0680812885, 14747.5262010204, 3056.68845488853,
2816.71926989818, 2749.36420670811, 235.735465225037, 180.035634686231, 154.233382264554,
18.3155310577229, 14.6556376252941, 12.9114042847746, 7.25873706497637, 5.28602473298968,
4.77472676273396, 1.40092075289793e-13, -1.58975943582931e-13, -8.39707350499964e-13
#>
#> Beginning fit attempt 231 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 232 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 233 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 234 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 235 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 236 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 237 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 238 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 239 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 240 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 241 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 242 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 243 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 244 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 245 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 246 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 247 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 248 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 249 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 250 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 251 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

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#>
#> Beginning fit attempt 252 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 253 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 254 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 255 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
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#> Beginning fit attempt 256 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 257 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 258 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
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#> Beginning fit attempt 259 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 260 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

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#>
#> Beginning fit attempt 261 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 262 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 263 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 264 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
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#> Beginning fit attempt 265 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
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#>   Fit attempt generated errors
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#> Beginning fit attempt 266 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
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#> Beginning fit attempt 267 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
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#> Beginning fit attempt 268 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
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#> Beginning fit attempt 269 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 270 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
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#> Beginning fit attempt 271 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 272 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 273 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 274 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 275 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 276 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 277 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 278 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#> 
#> Beginning fit attempt 279 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 280 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 281 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 282 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 283 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 284 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 285 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 286 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 287 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 288 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 289 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 290 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
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#> Beginning fit attempt 291 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
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#> Beginning fit attempt 292 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
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#>  Fit attempt generated errors
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#> Beginning fit attempt 293 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
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#> Beginning fit attempt 294 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
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#> Beginning fit attempt 295 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 296 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

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#>
#> Beginning fit attempt 297 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
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#> Beginning fit attempt 298 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 299 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 300 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 301 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 302 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 303 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 304 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 305 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 306 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 307 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 308 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 309 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 310 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 311 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 312 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 313 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 314 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#> Solution found
```

```
#>
#>  Solution found!    Final fit=-530.1288 (started at 28.931579)  (315 attempt(s):
14 valid, 301 errors)
#>  Start values from best fit:
#> -0.806454425443799,0.354217576636658,-1.11169693249588,0.213378527171152,-0.469257939120025,1.235
#> Running CTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:    -560.731484809766
#>  Not all eigenvalues of the Hessian are positive:  7625969.98567692, 6149975.05815003,
4167985.57993079, 24374.8714248819, 23243.703265794, 22279.1373697988, 4415.44881173564,
3924.46065874011, 3760.47899730627, 192.135188969158, 188.658997121112, 177.482696418745,
18.6849877324023, 18.1741303889315, 17.3364983825933, 7.48107561793673, 6.80842137841372,
6.47274989594935, 1.12074727824056e-12, 7.12812656143493e-14, -7.90166217382547e-12
#>
#> Beginning fit attempt 1 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:    -560.731484809775
#>  Not all eigenvalues of the Hessian are positive:  7625950.16851303, 6149975.0912616,
4167985.59018883, 24374.8711543996, 23243.7065296231, 22279.1334537184, 4415.46093898205,
3924.47265194118, 3760.4836645619, 192.132120311784, 188.676064006189, 177.478195185247,
18.7054709249854, 18.1891550963279, 17.3511464225365, 7.50355410725702, 6.82492099156313,
6.48667300208325, 5.5169933652049e-12, 3.00288756690539e-14, -3.12196110778133e-13
#>
#> Beginning fit attempt 2 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  7625950.16851303, 6149975.0912616,
4167985.59018883, 24374.8711543996, 23243.7065296231, 22279.1334537184, 4415.46093898205,
3924.47265194118, 3760.4836645619, 192.132120311784, 188.676064006189, 177.478195185247,
18.7054709249854, 18.1891550963279, 17.3511464225365, 7.50355410725702, 6.82492099156313,
6.48667300208325, 5.5169933652049e-12, 3.00288756690539e-14, -3.12196110778133e-13
#>
#> Beginning fit attempt 3 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:    -560.731484817563
#>  Not all eigenvalues of the Hessian are positive:  7625693.55876242, 6149903.65914392,
4168033.46922567, 24374.5019313402, 23243.6634988717, 22279.2453477177, 4415.49569952345,
3924.50857516477, 3760.45067936824, 192.131222242334, 188.673121117934, 177.476980258388,
18.7036461088353, 18.1789062388855, 17.3487373123354, 7.49054091935929, 6.8211556977534,
6.47732212956814, 2.17515899813863e-12, 2.13710257928092e-13, -2.2444796086027e-13
#>
#> Beginning fit attempt 4 of at maximum 1000 extra tries
```

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```
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  7625693.55876242, 6149903.65914392,
4168033.46922567, 24374.5019313402, 23243.6634988717, 22279.2453477177, 4415.49569952345,
3924.50857516477, 3760.45067936824, 192.131222242334, 188.673121117934, 177.476980258388,
18.7036461088353, 18.1789062388855, 17.3487373123354, 7.49054091935929, 6.8211556977534,
6.47732212956814, 2.17515899813863e-12, 2.13710257928092e-13, -2.24447960860275e-13
#>
#> Beginning fit attempt 5 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 6 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 7 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 8 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 9 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 10 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:   -560.731484818492
#>  Not all eigenvalues of the Hessian are positive:  7625732.49220056, 6149909.11392154,
4168051.62513139, 24374.5090907593, 23243.6808920913, 22279.2888505781, 4415.47961099128,
3924.51997139549, 3760.45542907655, 192.130371605084, 188.668963218486, 177.480406978272,
18.697153093146, 18.1783349013988, 17.3471427179425, 7.49022606995155, 6.81874089510364,
6.47598239717778, 7.01708866575694e-12, 1.91166470252157e-14, -3.19786452471673e-13
#>
#> Beginning fit attempt 11 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:   -560.731484818492
```

```
#>
#> Solution found


#>
#>  Solution found!    Final fit=-560.73148 (started at 11.961722)  (12 attempt(s):
7 valid, 5 errors)
#>  Start values from best fit:
#> -0.773896749261216,0.831528795731687,-0.186012009383326,-0.0681126765950901,-0.311854453910831,0.
#> Running CTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:    -528.031988585337
#>  Not all eigenvalues of the Hessian are positive:  6843263.03222863, 5287149.73341118,
3138694.69147306, 21295.144372613, 17193.3193606532, 14559.8826687506, 4810.75641775445,
2262.38571805119, 1600.50198346041, 71.4710415716635, 49.3004902043506, 37.4577061953264,
27.9140996410678, 20.2493631738248, 13.8592306263201, 10.8032629790886, 8.88402092563814,
6.87982253055402, 3.40327418833315e-13, 2.38738919544522e-14, -7.13255680322536e-13
#>
#> Beginning fit attempt 1 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:    -528.031988585338
#>
#> Solution found


#>
#>  Solution found!    Final fit=-528.03199 (started at 10.679318)  (2 attempt(s):  2
valid, 0 errors)
#>  Start values from best fit:
#> -0.297596828022915,0.588803649495887,-0.0203989481699172,-0.00192472325953657,-0.360878720143291,
#> Running CTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:    -515.647049027499
#>  Not all eigenvalues of the Hessian are positive:  6038451.87101318, 5874910.55421333,
3116390.31852341, 21710.7970032881, 18198.1288917709, 11404.4951816863, 5293.25779295145,
3929.41968288064, 2567.54960678576, 94.8754225377603, 77.4543874483092, 60.0470796035336,
51.0045136491667, 40.9416308011646, 32.228883221517, 26.309963279906, 21.1990402604574,
16.6574470918493, 2.34387513625531e-12, 4.79403474484757e-15, -2.33583301692062e-13
#>
#> Beginning fit attempt 1 of at maximum 1000 extra tries
```

```
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:    -515.6470490275
#>  Not all eigenvalues of the Hessian are positive:  6038451.61519009, 5874910.46247849,
3116390.72572693, 21710.802441326, 18198.1305510641, 11404.4986162095, 5293.26751895817,
3929.4233081982, 2567.5544484263, 94.8780145445014, 77.4566269299447, 60.0556199324859,
51.0012576888726, 40.9422158977451, 32.2280902392497, 26.3210444037253, 21.2073305419586,
16.6694963883437, 1.61037084383205e-14, -1.74653408244408e-13, -4.36751919655184e-13
#>
#> Beginning fit attempt 2 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  6038451.61519009, 5874910.46247849,
3116390.72572693, 21710.802441326, 18198.1305510641, 11404.4986162095, 5293.26751895817,
3929.4233081982, 2567.5544484263, 94.8780145445014, 77.4566269299447, 60.0556199324859,
51.0012576888726, 40.9422158977451, 32.2280902392497, 26.3210444037253, 21.2073305419586,
16.6694963883437, 1.61037084383205e-14, -1.74653408244408e-13, -4.36751919655184e-13
#>
#> Beginning fit attempt 3 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 4 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 5 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 6 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 7 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 8 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 9 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 10 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 11 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 12 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 13 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 14 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 15 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 16 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 17 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 18 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  6038447.5435395, 5874902.76880234,
3116384.77683686, 21710.7814695324, 18198.1136116011, 11404.481210366, 5293.26696164526,
3929.41635875526, 2567.55210132426, 94.8797216887355, 77.4613586773247, 60.055265759554,
50.9983748763018, 40.9420120440885, 32.2325565923256, 26.3223748573967, 21.21127375681,
16.6688673438524, 5.95614932149004e-13, 4.2234851184483e-15, -2.73544501172855e-13
#>
#> Beginning fit attempt 19 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 20 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 21 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 22 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 23 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 24 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 25 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 26 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 27 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 28 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 29 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 30 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 31 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 32 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 33 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 34 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 35 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 36 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 37 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 38 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 39 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 40 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 41 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 42 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 43 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 44 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 45 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 46 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 47 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 48 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 49 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 50 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 51 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 52 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 53 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 54 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 55 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 56 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 57 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 58 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 59 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 60 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 61 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 62 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 63 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 64 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 65 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 66 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 67 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 68 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 69 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 70 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 71 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 72 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  6038452.22553589, 5874910.5597202,
3116389.14684724, 21710.7987661298, 18198.1331285685, 11404.5008571158, 5293.26320363847,
3929.41600426357, 2567.55155032577, 94.872943961383, 77.4520952424699, 60.0459787235299,
51.0044501945628, 40.9411296238322, 32.225333254162, 26.3136755194808, 21.1986518429838,
16.662834454784, 3.87699559202731e-13, -2.05180671880252e-14, -4.01592970371915e-12
#>
#> Beginning fit attempt 73 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 74 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 75 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 76 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 77 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 78 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 79 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#> 
#> Beginning fit attempt 80 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 81 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 82 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 83 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 84 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 85 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 86 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 87 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 88 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 89 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 90 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 91 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 92 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 93 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 94 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 95 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 96 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>   Not all eigenvalues of the Hessian are positive:  6038448.8780437, 5874907.05372609,
#> 3116388.87852187, 21710.7921770288, 18198.1162052382, 11404.496673361, 5293.26401503466,
#> 3929.41636848941, 2567.54855824611, 94.874258348428, 77.455956643822, 60.0495554477163,
#> 51.0029397996034, 40.9383771832167, 32.2273147010931, 26.3172461800562, 21.2029507627095,
#> 16.6627097681833, -2.74590997806814e-15, -1.00836831126451e-13, -9.40248968514815e-13
#>
#> Beginning fit attempt 97 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 98 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 99 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 100 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 101 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 102 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 103 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 104 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 105 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 106 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 107 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 108 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 109 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 110 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 111 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 112 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 113 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 114 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 115 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 116 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 117 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 118 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 119 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 120 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 121 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 122 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 123 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 124 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 125 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 126 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 127 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 128 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 129 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 130 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 131 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 132 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 133 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 134 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 135 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 136 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 137 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 138 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 139 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 140 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 141 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 142 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 143 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 144 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 145 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 146 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 147 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 148 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 149 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  6038451.08904164, 5874909.61058082,
3116391.74728872, 21710.800181661, 18198.1279165364, 11404.4952909688, 5293.2649849337,
3929.41662844813, 2567.54995908978, 94.8720825327433, 77.4506921276339, 60.044788952725,
51.0058976090634, 40.9416615638602, 32.2281025575155, 26.3086419894082, 21.1988055119219,
16.6570193906965, 5.92522272494385e-13, 4.14691452085805e-14, -8.76353721660737e-13
#>
#> Beginning fit attempt 150 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 151 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 152 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 153 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 154 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 155 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 156 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 157 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 158 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 159 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 160 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 161 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 162 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 163 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 164 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 165 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 166 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 167 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 168 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 169 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 170 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 171 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 172 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>   Not all eigenvalues of the Hessian are positive:  6038425.10448522, 5874921.93976298,
3116366.67836715, 21710.7866381096, 18198.0654103999, 11404.497804498, 5293.2398884138,
3929.44802904662, 2567.53892603231, 94.8852091133447, 77.4636476487494, 60.0580441078462,
50.9979718988333, 40.9469536385073, 32.2310577453806, 26.3233705560947, 21.2093148023752,
16.6690609169, 1.6959265728468e-14, -1.22780120584072e-12, -1.48244865808815e-12
#>
#> Beginning fit attempt 173 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 174 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 175 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 176 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 177 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 178 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 179 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 180 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 181 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 182 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 183 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 184 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 185 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 186 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 187 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 188 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-515.64705 (started at 63.430627)   (189 attempt(s):
9 valid, 180 errors)
#>  Start values from best fit:
#> -0.542108269436447,0.782001370289521,-0.181883156279872,-0.329686115365658,-0.552601632055573,0.7
#> Running CTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:    -558.720937777153
#>  Not all eigenvalues of the Hessian are positive:  6601089.39751735, 5884924.63808948,
4997188.00356087, 33835.7219413869, 25546.9954494891, 19029.4886076034, 6415.76001259731,
5532.81512082874, 4129.73205423873, 182.000190808867, 100.602518291112, 94.7718429184514,
79.9394602954161, 53.5090739909404, 44.8244759206585, 42.8387218197751, 25.6224033080914,
20.372310026414, 2.03162340199658e-13, -3.36449877202914e-14, -5.37046339443076e-13
#>
#> Beginning fit attempt 1 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:    -558.7209377781
#>  Not all eigenvalues of the Hessian are positive:  6601114.80924619, 5884961.35191255,
4997198.73790025, 33835.7671935003, 25547.0406971666, 19029.5554078384, 6415.76057941822,
5532.83643566678, 4129.73768881028, 181.990222551539, 100.614736384423, 94.7827234132145,
79.9480309830447, 53.5199474017636, 44.8252232594688, 42.8531030942149, 25.6248264142209,
20.3828474924006, 1.330488679924e-12, -8.1444871102363e-14, -2.92277996333605e-13
#>
#> Beginning fit attempt 2 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:    -558.7209377781
#>  Not all eigenvalues of the Hessian are positive:  6601114.81137195, 5884961.35848123,
```

```
4997198.75215046, 33835.7694298183, 25547.0448699406, 19029.5641270087, 6415.77544899202,
5532.84450665967, 4129.74470227385, 181.979620036585, 100.623109926883, 94.7898665953769,
79.9591989940912, 53.530328865828, 44.8321407295844, 42.8666362959187, 25.6385295401401,
20.3963153995649, 9.56778350181898e-13, 6.87948997095359e-13, -3.36642243400588e-13
#>
#> Beginning fit attempt 3 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  6601083.95511159, 5884929.17041397,
4997195.50318168, 33835.682805855, 25547.0205138035, 19029.5121719115, 6415.76640926891,
5532.82469803937, 4129.73271180572, 181.988495412502, 100.616924264988, 94.7820324697286,
79.9489443358309, 53.5238256527024, 44.826038844462, 42.8562109122388, 25.6356461322622,
20.3880657061216, 1.13535934713936e-12, 7.86896080029883e-14, -9.03082442736925e-13
#>
#> Beginning fit attempt 4 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 5 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 6 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 7 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 8 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt worse than current best:   -436.474986609135 vs -558.7209377781
#>
#> Beginning fit attempt 9 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 10 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 11 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 12 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 13 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 14 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 15 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 16 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 17 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 18 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 19 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 20 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 21 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 22 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 23 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 24 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 25 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 26 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 27 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 28 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 29 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 30 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 31 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 32 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 33 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 34 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 35 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 36 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 37 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 38 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 39 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 40 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 41 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 42 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 43 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 44 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 45 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 46 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 47 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 48 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 49 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 50 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 51 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 52 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 53 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 54 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-558.72094 (started at 38.520388)  (55 attempt(s):
```

```
6 valid, 49 errors)
#>  Start values from best fit:
#> -0.103705578109184,0.915457261043657,-0.428671110202926,-0.227606623702827,-0.794292069159513,0.'
#> Running CTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:    -543.888428582115
#>  Not all eigenvalues of the Hessian are positive:  6150256.70300708, 5566658.39469311,
4514588.7491788, 23590.0521800995, 20860.311892495, 18411.1813813936, 3791.71759906402,
2926.32157702242, 2777.85926556674, 288.127919395095, 235.234027317613, 198.134248170137,
108.297873127757, 89.1803339835341, 74.6120042797422, 18.4415731850142, 16.4251537749956,
13.8418799613901, 3.5066617526711e-14, -2.36586284843832e-13, -8.66792439575725e-13
#>
#> Beginning fit attempt 1 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  6150256.70300708, 5566658.39469311,
4514588.7491788, 23590.0521800995, 20860.311892495, 18411.1813813936, 3791.71759906402,
2926.32157702242, 2777.85926556674, 288.127919395095, 235.234027317613, 198.134248170137,
108.297873127757, 89.1803339835341, 74.6120042797422, 18.4415731850142, 16.4251537749956,
13.8418799613901, 3.5066617526711e-14, -2.36586284843832e-13, -8.66792439575725e-13
#>
#> Beginning fit attempt 2 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 3 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 4 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 5 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 6 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 7 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 8 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 9 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 10 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 11 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 12 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 13 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 14 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 15 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 16 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 17 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 18 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 19 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 20 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 21 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 22 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 23 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 24 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 25 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 26 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 27 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 28 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 29 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 30 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:   -543.888428583025
#>  Not all eigenvalues of the Hessian are positive:  6150265.39007906, 5566660.98362052,
#> 4514583.97340055, 23589.9983656527, 20860.3091702041, 18411.1558053852, 3791.70676735782,
#> 2926.30379834504, 2777.84606562772, 288.123386048515, 235.235693311908, 198.130485416186,
#> 108.295731281337, 89.1768649813752, 74.601699742554, 18.4366960543098, 16.4198305256448,
#> 13.8343627750934, 1.35436732705446e-13, -6.08798878890816e-15, -3.76595411795073e-13
#>
#> Beginning fit attempt 31 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:   -543.888428584481
#>  Not all eigenvalues of the Hessian are positive:  6150336.31295875, 5566765.81294586,
#> 4514603.03350074, 23590.2551259615, 20860.4041574007, 18411.2595430168, 3791.73709224226,
#> 2926.32617196468, 2777.87043960239, 288.131881163246, 235.230660098822, 198.141139960334,
```

```
108.297806401897, 89.1824011622265, 74.6130800097173, 18.4429045228655, 16.4283399327621,
13.8428708388933, 2.14244843692117e-13, 1.45331867976365e-13, -3.10894760819482e-14
#>
#> Beginning fit attempt 32 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  6150336.31295875, 5566765.81294586,
4514603.03350074, 23590.2551259615, 20860.4041574007, 18411.2595430168, 3791.73709224226,
2926.32617196468, 2777.87043960239, 288.131881163246, 235.230660098822, 198.141139960334,
108.297806401897, 89.1824011622265, 74.6130800097173, 18.4429045228655, 16.4283399327621,
13.8428708388933, 2.14244843692117e-13, 1.45331867976365e-13, -3.10894760819482e-14
#>
#> Beginning fit attempt 33 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 34 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 35 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 36 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 37 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 38 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 39 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 40 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 41 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 42 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 43 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 44 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 45 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 46 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 47 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 48 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 49 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 50 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 51 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 52 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 53 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 54 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 55 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 56 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 57 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#> 
#> Beginning fit attempt 58 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 59 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 60 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 61 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 62 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 63 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 64 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 65 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 66 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 67 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 68 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 69 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 70 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 71 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 72 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 73 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 74 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 75 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
```

```
#> 
#> Beginning fit attempt 76 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 77 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 78 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 79 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 80 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 81 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 82 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 83 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 84 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 85 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 86 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>   Not all eigenvalues of the Hessian are positive:  6150255.52305756, 5566666.39152313,
4514575.00595624, 23590.0548563724, 20860.3260064559, 18411.1422532185, 3791.74205385913,
2926.30910614401, 2777.850586513, 288.129016731238, 235.229065415821, 198.137190019235,
108.297241995366, 89.1835877821502, 74.6115420615487, 18.438829623942, 16.4219949363875,
13.8427444616107, 6.91971755581866e-14, -6.35376775834342e-14, -2.93595841394269e-13
#>
#> Beginning fit attempt 87 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 88 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 89 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 90 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 91 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 92 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 93 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 94 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 95 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 96 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 97 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 98 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 99 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 100 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 101 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 102 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 103 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 104 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 105 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 106 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 107 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 108 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 109 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 110 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 111 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 112 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 113 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 114 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#> Solution found
```

```
#>
#>  Solution found!    Final fit=-543.88843 (started at 45.193342)  (115 attempt(s):
7 valid, 108 errors)
#>  Start values from best fit:
#> -0.227029009400242,1.04493493568652,-0.66450660760432,-0.0243766340221314,-0.560229084121045,0.8
#> Running CTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:   -547.617460308703
#>  Not all eigenvalues of the Hessian are positive:  8022791.41505351, 5072966.35480945,
3355384.64255966, 27440.8692048686, 20923.2235062278, 12695.7442941859, 6269.6427472563,
2529.53220378815, 2351.63646094184, 184.953169579417, 120.336804425985, 91.3357371919267,
29.7531130060209, 19.87436506989, 14.975074898715, 5.23935684819425, 2.9491718193241,
2.60382856578498, 9.04841535220139e-14, -1.87165109807723e-16, -3.59569440502075e-13
#>
#> Beginning fit attempt 1 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:   -547.617460310448
#>  Not all eigenvalues of the Hessian are positive:  8022795.47585846, 5073150.02292954,
3355386.68463112, 27441.1329638492, 20923.2885820691, 12695.8636600834, 6269.6502861876,
2529.55039912764, 2351.65010802138, 184.955598539748, 120.333479027934, 91.3374043962741,
29.7605258694928, 19.8777709766963, 14.969989471597, 5.25125926990046, 2.95127189601218,
2.60539484663534, 6.80097110878243e-14, -7.07132914451566e-14, -1.23284184457937e-13
#>
```

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```
#> Beginning fit attempt 2 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  8022795.47585846, 5073150.02292954,
3355386.68463112, 27441.1329638492, 20923.2885820691, 12695.8636600834, 6269.6502861876,
2529.55039912764, 2351.65010802138, 184.955598539748, 120.333479027934, 91.3374043962741,
29.7605258694928, 19.8777709766963, 14.969989471597, 5.25125926990046, 2.95127189601218,
2.60539484663534, 6.80097110878243e-14, -7.07132914451566e-14, -1.23284184457937e-13
#>
#> Beginning fit attempt 3 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 4 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 5 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 6 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 7 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 8 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 9 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  8022934.19494762, 5073034.30489785,
3355199.96525585, 27441.1928426986, 20922.4251951065, 12695.4598617766, 6269.59788851209,
2529.49714900673, 2351.60450481172, 184.959355513496, 120.332821636499, 91.33725964337,
29.7569290494024, 19.8756923693897, 14.9760065427384, 5.24545231599823, 2.95365051678352,
2.60433414415204, 1.2272088229625e-13, -3.28738383491372e-13, -8.08061952561103e-13
```

```
#>
#> Beginning fit attempt 10 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 11 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 12 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 13 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 14 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 15 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 16 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 17 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 18 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 19 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 20 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 21 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 22 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 23 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 24 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 25 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 26 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 27 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 28 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 29 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 30 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 31 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 32 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 33 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 34 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 35 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 36 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 37 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 38 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 39 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 40 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 41 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 42 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 43 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 44 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 45 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 46 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 47 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 48 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 49 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 50 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 51 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 52 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 53 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 54 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 55 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 56 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 57 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 58 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 59 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 60 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 61 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 62 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 63 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 64 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 65 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 66 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 67 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 68 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 69 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 70 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 71 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 72 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 73 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 74 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 75 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 76 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  8022811.14047636, 5072938.32803783,
3355305.94633223, 27441.1847160508, 20923.1556823486, 12695.8084930823, 6269.67413068685,
2529.57769450637, 2351.69252351062, 184.956008450159, 120.333351857592, 91.3381345242,
29.7569444112103, 19.8768020065002, 14.9753384927777, 5.24648707485436, 2.95043060483623,
2.60671674143766, 2.33658807033362e-13, 9.14074124128604e-14, -1.18845544465159e-12
#>
#> Beginning fit attempt 77 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 78 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 79 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 80 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 81 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 82 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 83 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 84 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 85 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  8022834.45452095, 5072944.02493588,
3355294.29211453, 27441.1796429083, 20923.1248358563, 12695.7614202389, 6269.67579226708,
2529.56237122047, 2351.67887088317, 184.950956441841, 120.341393881264, 91.3327395022038,
29.7520049245347, 19.8712832750786, 14.9731314838206, 5.23943243353725, 2.9470610781641,
2.60153228326034, 4.91265725401777e-13, 5.87531840208428e-14, -5.8271643278182e-14
#>
#> Beginning fit attempt 86 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 87 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 88 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 89 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 90 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 91 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 92 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 93 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 94 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 95 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 96 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 97 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  8022831.81561535, 5072944.83411692,
3355293.77953563, 27441.1815128869, 20923.1197794037, 12695.7626621493, 6269.67603609532,
2529.56594808107, 2351.67821905934, 184.953519124483, 120.344341532585, 91.332997497615,
29.7530415121875, 19.8714787785679, 14.9691126724484, 5.23860140314837, 2.9445344644584,
2.60061880406797, 2.90388332160349e-13, -1.35698022803994e-14, -7.25105772530825e-13
#>
#> Beginning fit attempt 98 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 99 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 100 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 101 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  8022822.13656798, 5072952.41507828,
3355295.50761739, 27441.1722950678, 20923.1333311838, 12695.7756010786, 6269.6677524108,
2529.57226853294, 2351.68082757509, 184.955330096112, 120.3388725068744, 91.3357184240281,
29.7540504781266, 19.8735820030085, 14.9708445930301, 5.24230873005125, 2.94964254394198,
2.60303283540655, 3.21410948489253e-13, -6.83537048121595e-14, -4.35825974562107e-13
#>
#> Beginning fit attempt 102 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 103 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 104 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 105 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 106 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 107 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 108 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 109 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  8022832.93602261, 5072949.24984213,
3355293.01579365, 27441.187263399, 20923.1228478346, 12695.7570692832, 6269.67826447056,
2529.56364429398, 2351.67636773004, 184.952839258061, 120.341355735731, 91.3330837587469,
29.7560631004367, 19.8710198493806, 14.971202922981, 5.24548449923022, 2.94833352349861,
2.60052219775383, -1.09964854188267e-13, -1.98475387592814e-13, -2.87555234688783e-13
#>
#> Beginning fit attempt 110 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 111 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 112 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 113 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 114 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  8022801.81315649, 5072941.23655983,
3355299.53160328, 27441.125397587, 20923.1051945207, 12695.740973325, 6269.64735451704,
2529.56264462073, 2351.67649493245, 184.954371388253, 120.338453407201, 91.3331306162567,
29.7543502393966, 19.8745029929536, 14.9703680277838, 5.24468342605168, 2.94661999345485,
2.60067317608977, 6.28077000861522e-14, -5.21115998329936e-14, -2.77003910193425e-13
```

```
#> 
#> Beginning fit attempt 115 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 116 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 117 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 118 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 119 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 120 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 121 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 122 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 123 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 124 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  8021324.24909018, 5073298.21150522,
3354544.80423211, 27437.0646469102, 20919.2723255732, 12693.4509412908, 6268.6253422838,
2529.04585185046, 2351.10732582145, 184.941618184917, 120.328744197378, 91.3275320623804,
29.7557963108223, 19.8712117345744, 14.9710802968138, 5.24538091716365, 2.94774849682998,
2.60210094735907, 1.28421350499864e-13, 9.53148779182781e-14, -7.9562772325359e-13
#>
#> Beginning fit attempt 125 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 126 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 127 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 128 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 129 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 130 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 131 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 132 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 133 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 134 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 135 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 136 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 137 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 138 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 139 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 140 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 141 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

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#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 142 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 143 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 144 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 145 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 146 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 147 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 148 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 149 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 150 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 151 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  8022853.2565519, 5072948.82058824,
3355312.49748522, 27441.2128114089, 20923.2241237244, 12695.8023411906, 6269.69834228366,
2529.575391171, 2351.68275575924, 184.95669563843, 120.337231292824, 91.3365366374986,
29.7553955411378, 19.8752029036504, 14.9722296774832, 5.24707832319931, 2.94847665799043,
2.60172448858513, 9.06980650007231e-13, 1.73570519704137e-14, -1.41116992404927e-13
#>
#> Beginning fit attempt 152 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 153 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 154 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 155 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 156 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  8022833.64708201, 5072945.53013573,
3355287.81744154, 27441.1397809281, 20923.1394653115, 12695.7485994583, 6269.67731032877,
2529.56184460246, 2351.6749082291, 184.953577209154, 120.337893551564, 91.3352086900389,
29.7563012385253, 19.8720480055631, 14.9752140620249, 5.2417140210508, 2.94952677047893,
2.60409322229206, 5.24769725919334e-14, 1.57141924747994e-14, -7.84012668177119e-13
#>
#> Beginning fit attempt 157 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 158 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 159 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 160 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 161 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 162 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 163 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 164 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 165 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 166 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 167 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 168 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>   Not all eigenvalues of the Hessian are positive:  8022830.29896115, 5072947.59473781,
3355294.92830925, 27441.1745234103, 20923.1242980276, 12695.7642973034, 6269.6731702584,
2529.56033842353, 2351.67731670214, 184.947336590414, 120.349406733335, 91.3302069474784,
29.7525406722762, 19.8677314256626, 14.9666196754628, 5.23575159539252, 2.94314624198943,
2.5985058851682, 8.26628415317924e-14, 2.91969723992765e-14, -5.56339574008289e-14
#>
#> Beginning fit attempt 169 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 170 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 171 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 172 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 173 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 174 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>   Not all eigenvalues of the Hessian are positive:  8022826.23251378, 5072960.90995117,
3355284.61964222, 27441.2312871407, 20923.0662366306, 12695.749764783, 6269.675460951,
2529.56843067, 2351.67899762683, 184.958237849792, 120.334025124161, 91.3368987021335,
29.7606264498274, 19.8778179040586, 14.9773746525585, 5.24890786728786, 2.94977910454568,
2.60496372039137, -1.04971381549533e-13, -2.13678219520851e-13, -8.37437777928358e-13
#>
#> Beginning fit attempt 175 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

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```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 176 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 177 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 178 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 179 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 180 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 181 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:   -547.617460310464
#>  Not all eigenvalues of the Hessian are positive:  8022850.57123821, 5072967.39904872,
3355293.61471597, 27441.1213973317, 20923.153021503, 12695.7568426307, 6269.68388889795,
2529.5544411016, 2351.66337613483, 184.955672414274, 120.338469660274, 91.3367685274838,
29.7563073649696, 19.8747548509067, 14.9758930255388, 5.24014051338817, 2.9484764479174,
2.60288730198641, 1.89113549220467e-13, -4.87799200595691e-14, -3.30650142020452e-13
#>
#> Beginning fit attempt 182 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  8022850.57123821, 5072967.39904872,
3355293.61471597, 27441.1213973317, 20923.153021503, 12695.7568426307, 6269.68388889795,
2529.5544411016, 2351.66337613483, 184.955672414274, 120.338469660274, 91.3367685274838,
29.7563073649696, 19.8747548509067, 14.9758930255388, 5.24014051338817, 2.9484764479174,
2.60288730198641, 1.89113549220467e-13, -4.87799200595691e-14, -3.30650142020452e-13
```

```
#>
#> Beginning fit attempt 183 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  8022845.10777189, 5072962.22333885,
3355278.91210174, 27441.1826475198, 20923.1127931347, 12695.7725231806, 6269.6895425738,
2529.55208767334, 2351.66922624706, 184.953113945318, 120.335572755297, 91.3349260216383,
29.7513805560545, 19.8728016405609, 14.970552780197, 5.24415392728801, 2.94973019248482,
2.60138277732834, 4.17937497251727e-13, 2.2892499360505e-13, -5.16892770539788e-14
#>
#> Beginning fit attempt 184 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 185 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 186 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 187 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 188 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 189 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 190 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 191 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 192 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 193 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 194 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 195 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 196 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 197 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 198 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 199 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 200 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 201 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 202 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-547.61746 (started at 19.898216)  (203 attempt(s):
19 valid, 184 errors)
#>  Start values from best fit:
#> -0.31516584166394,1.61648375795786,-0.629249682959162,-0.108104407847877,-1.31408790231153,1.4992
#> Running CTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:    -562.12219272471
#>  Not all eigenvalues of the Hessian are positive:  5852050.36486895, 5628224.50006606,
3556266.44426115, 28722.1186198196, 20348.0673659394, 18806.3857739813, 5970.48525972,
3744.25014126407, 3476.20869998045, 452.019053526625, 359.604015738233, 288.289537305612,
154.101492776118, 122.705787969253, 98.0773604212552, 3.4241974530274, 2.81695311023248,
2.20823657812904, -6.40276258612379e-13, -9.64050778545006e-13, -3.05799904372514e-12
#>
#> Beginning fit attempt 1 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  5852050.36486895, 5628224.50006606,
3556266.44426115, 28722.1186198196, 20348.0673659394, 18806.3857739813, 5970.48525972,
3744.25014126407, 3476.20869998045, 452.019053526625, 359.604015738233, 288.289537305612,
154.101492776118, 122.705787969253, 98.0773604212552, 3.4241974530274, 2.81695311023248,
2.20823657812904, -6.40276258612379e-13, -9.64050778545006e-13, -3.05799904372514e-12
#>
#> Beginning fit attempt 2 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 3 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 4 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 5 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 6 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 7 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 8 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 9 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 10 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 11 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 12 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 13 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 14 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 15 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 16 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 17 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  5852036.61928598, 5628256.98552212,
3556234.5949889, 28722.0806393608, 20348.0546883709, 18806.3459489205, 5970.47459879746,
3744.23199079259, 3476.21218867834, 452.015037529504, 359.606854310501, 288.288035340379,
154.094669358429, 122.701460292464, 98.0701838471411, 3.41778918266425, 2.81486676838694,
2.20501249758089, 1.28153556923085e-12, 1.1209683577316e-13, -3.55512561206698e-12
#>
#> Beginning fit attempt 18 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 19 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 20 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 21 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 22 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 23 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 24 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 25 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 26 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 27 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 28 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 29 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 30 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 31 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 32 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 33 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 34 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 35 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 36 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 37 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 38 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 39 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 40 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 41 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 42 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 43 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 44 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 45 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 46 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 47 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 48 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 49 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt worse than current best:   -258.377719226 vs -562.12219272471
#>
#> Beginning fit attempt 50 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  5852086.85554245, 5628074.84893374,
3556254.80642313, 28722.0801358882, 20347.7118668748, 18806.2643436522, 5970.5245748494,
3744.23248270756, 3476.14067653719, 452.021221455433, 359.604192915408, 288.290784246376,
154.103195292296, 122.705635302031, 98.0787915689206, 3.42713049421145, 2.81934481476675,
2.2097715205176, 1.02425140085689e-13, -2.76232395267715e-13, -1.19576386813302e-12
#>
#> Beginning fit attempt 51 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 52 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 53 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 54 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 55 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#> Solution found
```

```
#>
#>  Retry limit reached; Best fit=-544.47869 (started at 14.599975)  (1001 attempt(s):
56 valid, 945 errors)
#>  Start values from best fit:
#> -0.323004118193566,0.961809111227393,0.0127735265541389,0.0168092473448556,2.2250738585072e-308,(
#> Running CTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:    -562.517817573708
#>  Not all eigenvalues of the Hessian are positive:  7719758.57906502, 4021590.91866098,
3580449.54986531, 24784.7373879609, 22795.961726548, 17970.6971242031, 5621.06403453615,
3718.91237449644, 2927.26799335194, 44.2666260384172, 38.5891236599797, 31.0016325411836,
19.3885327947931, 17.2313122646271, 14.2720156306163, 3.5582402698983, 3.20958377934528,
2.39069181579001, 1.42206339920342e-12, -1.69861583176294e-14, -3.45599223671501e-12
#>
#> Beginning fit attempt 1 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:    -562.517817573711
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-562.51782 (started at -9.6437091)  (2 attempt(s):
2 valid, 0 errors)
#>  Start values from best fit:
#> -0.821786903488947,1.45822435561948,-0.739218927447754,0.3873726685422,-1.81655063887968,1.145554
#> Running CTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:    -530.128797998623
#>  Not all eigenvalues of the Hessian are positive:  6318952.50004768, 4211284.02725843,
3720142.35544009, 21998.1000466107, 17317.1007599763, 14747.588529859, 3056.68748313503,
2816.73953181608, 2749.3670418835, 235.738851750679, 180.033571200539, 154.23159175773,
18.3142847453241, 14.6603783805005, 12.9098524659019, 7.25801273272356, 5.28665435438026,
4.7773921137803, 7.70495034019621e-13, -2.38730745623299e-14, -2.58512556988055e-13
#>
#> Beginning fit attempt 1 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>  Not all eigenvalues of the Hessian are positive:  6318952.50004768, 4211284.02725843,
3720142.35544009, 21998.1000466107, 17317.1007599763, 14747.588529859, 3056.68748313503,
2816.73953181608, 2749.3670418835, 235.738851750679, 180.033571200539, 154.23159175773,
18.3142847453241, 14.6603783805005, 12.9098524659019, 7.25801273272356, 5.28665435438026,
4.7773921137803, 7.70495034019621e-13, -2.38730745623299e-14, -2.58512556988055e-13
#>
#> Beginning fit attempt 2 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 3 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 4 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 5 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 6 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 7 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 8 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 9 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 10 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 11 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 12 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 13 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 14 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 15 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 16 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 17 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 18 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  6318943.01938649, 4211277.86540882,
3720141.71888864, 21998.0794887429, 17317.0510614958, 14747.5644872351, 3056.6892513568,
2816.73905820689, 2749.36320585015, 235.737897647555, 180.03389549464, 154.234357751129,
```

```
18.3208941728549, 14.6621638027549, 12.9148382875909, 7.25753673557349, 5.28964006477239,
4.77966225308095, 5.28596229725652e-13, 1.45258265748775e-13, -3.97631075753695e-13
#>
#> Beginning fit attempt 19 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 20 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 21 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 22 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 23 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 24 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 25 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 26 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 27 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

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#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 28 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 29 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 30 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 31 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 32 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 33 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 34 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 35 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 36 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 37 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 38 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 39 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 40 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 41 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 42 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 43 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 44 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 45 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 46 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 47 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 48 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 49 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:   -530.128797998639
#>  Not all eigenvalues of the Hessian are positive:  6318941.16970885, 4211282.37937701,
3720142.77745261, 21998.0859943328, 17317.064474708, 14747.5731947134, 3056.69427832559,
2816.73975459412, 2749.35825146468, 235.737745691078, 180.035871225429, 154.234944290639,
18.3199424231968, 14.6609215558624, 12.9132057376889, 7.25836516877061, 5.28911076697124,
4.78185597660515, 3.5967646002575e-13, -2.54548578232815e-13, -2.91534329423833e-13
#>
#> Beginning fit attempt 50 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:   -530.128797998649
#>  Not all eigenvalues of the Hessian are positive:  6318953.74635722, 4211281.42222715,
3720142.41623526, 21998.1006713369, 17317.0892303227, 14747.5758938016, 3056.69458270446,
2816.73989911045, 2749.36592470283, 235.739059298039, 180.032289260716, 154.237069940808,
18.3204147718091, 14.6606216431863, 12.91086173845, 7.25885502569519, 5.28840166170413,
4.78237425935176, 2.90133342652151e-13, 2.63494746558099e-13, -1.48563225607275e-13
#>
#> Beginning fit attempt 51 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  6318953.74635722, 4211281.42222715,
3720142.41623526, 21998.1006713369, 17317.0892303227, 14747.5758938016, 3056.69458270446,
2816.73989911045, 2749.36592470283, 235.739059298039, 180.032289260716, 154.237069940808,
18.3204147718091, 14.6606216431863, 12.91086173845, 7.25885502569519, 5.28840166170413,
4.78237425935176, 2.90133342652151e-13, 2.63494746558099e-13, -1.48563225607275e-13
```

```
#>
#> Beginning fit attempt 52 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 53 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 54 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 55 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 56 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 57 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 58 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 59 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 60 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 61 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 62 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 63 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 64 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 65 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 66 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 67 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 68 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 69 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#> 
#> Beginning fit attempt 70 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 71 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>   Not all eigenvalues of the Hessian are positive:  6318850.6045666, 4211254.81031663,
3720093.52320411, 21997.7866064895, 17316.901592403, 14747.3809708608, 3056.65828010383,
2816.67763707712, 2749.32519640606, 235.739880650461, 180.031522127085, 154.231182959463,
18.3188231756936, 14.6632984416912, 12.9074307054956, 7.25771483374464, 5.28542127284844,
4.77975348472768, 1.41148775988863e-12, 3.07057175179385e-13, -4.00266222981299e-13
#> 
#> Beginning fit attempt 72 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 73 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 74 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 75 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 76 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 77 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>   Not all eigenvalues of the Hessian are positive:  6318947.72515635, 4211282.91348678,
3720139.32022488, 21998.0915074861, 17317.0686722804, 14747.5798962407, 3056.68904894593,
2816.73630398735, 2749.36284630873, 235.73911215165, 180.033100012842, 154.235049446767,
18.3180111710963, 14.6626035726288, 12.9121362798668, 7.2596746866791, 5.28831085618673,
4.78072371332929, 1.27868185303492e-12, -2.82423030615203e-13, -5.118131284542e-13
```

```
#>
#> Beginning fit attempt 78 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 79 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 80 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 81 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 82 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 83 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 84 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 85 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 86 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 87 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 88 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 89 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 90 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 91 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 92 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 93 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 94 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 95 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 96 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 97 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 98 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 99 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 100 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 101 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 102 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 103 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 104 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#> 
#> Beginning fit attempt 105 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 106 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 107 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 108 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 109 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 110 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 111 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 112 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 113 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 114 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 115 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 116 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 117 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 118 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 119 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 120 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 121 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 122 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 123 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 124 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 125 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 126 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 127 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 128 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 129 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 130 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 131 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 132 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 133 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 134 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 135 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 136 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 137 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 138 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 139 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 140 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 141 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 142 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 143 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 144 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 145 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 146 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 147 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 148 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 149 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

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```
#> 
#> Beginning fit attempt 150 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 151 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 152 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 153 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 154 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 155 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 156 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 157 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 158 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Lowest minimum so far:    -530.128797998672
```

```
#>
#> Solution found


#>
#>  Solution found!    Final fit=-530.1288 (started at 0.67625989)  (159 attempt(s):
9 valid, 150 errors)
#>  Start values from best fit:
#> -0.80645604502419,0.35421347772109,-1.11169705429471,0.213379225507308,-0.469256421132306,1.23502
#> Running CTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:    -560.731484819223
#>  Not all eigenvalues of the Hessian are positive:  7625847.36983476, 6149894.93204611,
4168036.61844136, 24374.6324271664, 23243.6925570094, 22279.3585400996, 4415.51428130182,
3924.51410129622, 3760.44860075121, 192.132971695871, 188.673324889278, 177.478307306435,
18.7013600833389, 18.1822545786665, 17.3499454511197, 7.49477811500945, 6.81726606089313,
6.48065646405993, 9.1323825804305e-12, 1.21333002332085e-13, -6.07265623765259e-14
#>
#> Beginning fit attempt 1 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:    -560.731484819224
#>  Not all eigenvalues of the Hessian are positive:  7625847.37830351, 6149894.93772064,
4168036.6237842, 24374.6401591327, 23243.6886161604, 22279.3610664249, 4415.51533357937,
3924.51211900234, 3760.449497712, 192.130783803503, 188.67551289117, 177.477023512383,
18.7078936544608, 18.183438081938, 17.3494375266601, 7.49748150338212, 6.82329774369236,
6.48998573930469, -9.07338990379705e-14, -6.3759325195405e-13, -4.92719187985608e-12
#>
#> Beginning fit attempt 2 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  7625847.37830351, 6149894.93772064,
4168036.6237842, 24374.6401591327, 23243.6886161604, 22279.3610664249, 4415.51533357937,
3924.51211900234, 3760.449497712, 192.130783803503, 188.67551289117, 177.477023512383,
18.7078936544608, 18.183438081938, 17.3494375266601, 7.49748150338212, 6.82329774369236,
6.48998573930469, -9.07338990379705e-14, -6.3759325195405e-13, -4.92719187985608e-12
#>
#> Beginning fit attempt 3 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 4 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

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```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 5 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 6 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 7 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 8 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 9 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 10 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-560.73148 (started at -1.1440285)  (11 attempt(s):
#> 4 valid, 7 errors)
#>  Start values from best fit:
#> -0.773897398800097,0.83152616081995,-0.186014522275716,-0.0681135801490302,-0.311854411170852,0.8
#> Running CTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:    -528.031988587379
#>  Not all eigenvalues of the Hessian are positive:  6843264.81288914, 5287153.51521233,
```

```
3138701.73692056, 21295.1722238129, 17193.2792597281, 14559.975585802, 4810.64472057179,
2262.39279493716, 1600.50514616466, 71.4721726826759, 49.2989561740717, 37.4587640256737,
27.9161490020911, 20.2529407534722, 13.8557390165111, 10.797998679522, 8.88253608800837,
6.87753820169199, 2.13278855847434e-15, -3.1265174033089e-13, -4.30222478520019e-13
#>
#> Beginning fit attempt 1 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:   -528.031988589712
#>  Not all eigenvalues of the Hessian are positive:  6843477.78438947, 5287163.7177572,
3138704.17433775, 21295.3740461334, 17193.4339822742, 14559.9856774356, 4810.70359970605,
2262.40651316099, 1600.51243211291, 71.4721612593545, 49.3066118014648, 37.4509586150382,
27.9287511623029, 20.2637257286386, 13.8732297311145, 10.8150512996719, 8.89557238625839,
6.89066588417412, 3.35924494115419e-13, 6.28242915082105e-14, -7.21214655781978e-14
#>
#> Beginning fit attempt 2 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  6843477.78438947, 5287163.7177572,
3138704.17433775, 21295.3740461334, 17193.4339822742, 14559.9856774356, 4810.70359970605,
2262.40651316099, 1600.51243211291, 71.4721612593545, 49.3066118014648, 37.4509586150382,
27.9287511623029, 20.2637257286386, 13.8732297311145, 10.8150512996719, 8.89557238625839,
6.89066588417412, 3.35924494115419e-13, 6.28242915082105e-14, -7.21214655781978e-14
#>
#> Beginning fit attempt 3 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 4 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 5 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 6 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 7 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 8 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 9 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 10 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 11 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 12 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 13 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 14 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 15 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 16 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 17 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 18 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 19 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 20 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 21 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 22 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 23 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 24 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  6843261.8583862, 5287150.79951871,
3138694.02013354, 21295.138726312, 17193.3191562215, 14559.8749676843, 4810.75866324581,
2262.38863871829, 1600.50305332196, 71.4717500872425, 49.301325138041, 37.4559722802583,
27.9137474968729, 20.2505492555378, 13.8602432275732, 10.8018760889308, 8.88442947101038,
6.88264848078622, 1.42361151951693e-12, -1.51869777376887e-14, -1.72080857904385e-13
```

```
#>
#> Beginning fit attempt 25 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 26 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 27 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 28 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 29 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 30 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 31 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 32 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 33 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 34 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 35 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-528.03199 (started at -5.7169562)  (36 attempt(s):
5 valid, 31 errors)
#>  Start values from best fit:
#> -0.29759667063683,0.588803548125329,-0.0203987575852256,-0.00192498685990548,-0.360878560476859,(
#> Running CTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:   -515.647047554048
#>  Not all eigenvalues of the Hessian are positive:  6038584.57575168, 5875042.54642801,
3116330.04648489, 21711.5566713992, 18197.6063120271, 11403.774765822, 5293.3617922526,
3929.72450795444, 2567.38884068661, 94.8848743132581, 77.4676059175573, 60.0568834580322,
50.9952891035228, 40.9455982459014, 32.2299846142397, 26.3263938887228, 21.2104822367596,
16.6683763626403, 1.13140639259932e-13, -4.45182033656988e-15, -4.80058532166549e-13
#>
#> Beginning fit attempt 1 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  6038584.57575168, 5875042.54642801,
3116330.04648489, 21711.5566713992, 18197.6063120271, 11403.774765822, 5293.3617922526,
3929.72450795444, 2567.38884068661, 94.8848743132581, 77.4676059175573, 60.0568834580322,
50.9952891035228, 40.9455982459014, 32.2299846142397, 26.3263938887228, 21.2104822367596,
16.6683763626403, 1.13140639259932e-13, -4.45182033656988e-15, -4.80058532166549e-13
#>
#> Beginning fit attempt 2 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 3 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

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```
#> 
#> Beginning fit attempt 4 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 5 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 6 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 7 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 8 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 9 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 10 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 11 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 12 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 13 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 14 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 15 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 16 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 17 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 18 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 19 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 20 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 21 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 22 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 23 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 24 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 25 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 26 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 27 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 28 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 29 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 30 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 31 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 32 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 33 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 34 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 35 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 36 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 37 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 38 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 39 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 40 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 41 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 42 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 43 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 44 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 45 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 46 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 47 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 48 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 49 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 50 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 51 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 52 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 53 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 54 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 55 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 56 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 57 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 58 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 59 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 60 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:    -515.647049027468
#>  Not all eigenvalues of the Hessian are positive:  6038451.62252849, 5874909.93753325,
3116391.79810781, 21710.8014681183, 18198.1384815498, 11404.5009959434, 5293.26521538129,
3929.41613930932, 2567.55349653002, 94.8750078921957, 77.4519479167103, 60.0492845947834,
51.0043641204943, 40.9404551092322, 32.227530370196, 26.314749059994, 21.2035488549985,
16.6627859736131, 8.90864320441005e-13, -3.28221135115245e-15, -3.79989649643882e-13
#>
#> Beginning fit attempt 61 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:    -515.647049027473
#>  Not all eigenvalues of the Hessian are positive:  6038450.58768876, 5874909.58033842,
3116391.3313592, 21710.7995388701, 18198.1311864732, 11404.5013552755, 5293.26486545257,
3929.41981643897, 2567.5542484679, 94.8764567951646, 77.4551940005213, 60.0550968008034,
51.0003321170746, 40.9400627736784, 32.2287924571446, 26.3204663170485, 21.2092725871282,
16.6679406795941, 1.3070383697786e-12, -2.06044012559803e-14, -2.50929349059551e-13
#>
#> Beginning fit attempt 62 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  6038450.58768876, 5874909.58033842,
3116391.3313592, 21710.7995388701, 18198.1311864732, 11404.5013552755, 5293.26486545257,
3929.41981643897, 2567.5542484679, 94.8764567951646, 77.4551940005213, 60.0550968008034,
51.0003321170746, 40.9400627736784, 32.2287924571446, 26.3204663170485, 21.2092725871282,
16.6679406795941, 1.3070383697786e-12, -2.06044012559803e-14, -2.50929349059551e-13
#>
#> Beginning fit attempt 63 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 64 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 65 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 66 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 67 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 68 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 69 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 70 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 71 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 72 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 73 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 74 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 75 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 76 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 77 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 78 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 79 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 80 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 81 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 82 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

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#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 83 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 84 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 85 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 86 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 87 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 88 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 89 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 90 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 91 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

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#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 92 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 93 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 94 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 95 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 96 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 97 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 98 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 99 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 100 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 101 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 102 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 103 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 104 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 105 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 106 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 107 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 108 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 109 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 110 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 111 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 112 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 113 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 114 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 115 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 116 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 117 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 118 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

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#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 119 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 120 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 121 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 122 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 123 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 124 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 125 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 126 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 127 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

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#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 128 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 129 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 130 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 131 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 132 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 133 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 134 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 135 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 136 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

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#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 137 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 138 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 139 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 140 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 141 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 142 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 143 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 144 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 145 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 146 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 147 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:    -515.647049027497
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-515.64705 (started at 22.524012)  (148 attempt(s):
6 valid, 142 errors)
#>  Start values from best fit:
#> -0.542107864374264,0.782001449160373,-0.181883085040731,-0.329685655975067,-0.552601415746908,0.7
#> Running CTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:    -558.720937778286
#>  Not all eigenvalues of the Hessian are positive:  6601095.81693877, 5884957.27238016,
4997211.55295565, 33835.7350818486, 25546.9606154865, 19029.4687200764, 6415.71021628216,
5532.81247588639, 4129.73940462407, 181.99357119826, 100.607873640447, 94.774825758845,
79.9485041588024, 53.5105205320331, 44.8284033142946, 42.8493128446373, 25.6211243534513,
20.3790358315914, -5.12953029846532e-13, -6.88734669410903e-13, -1.32589503568249e-12
#>
#> Beginning fit attempt 1 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:    -558.720937778287
#>  Not all eigenvalues of the Hessian are positive:  6601095.82283506, 5884957.27595184,
4997211.5585578, 33835.7281392408, 25546.9749292466, 19029.476552032, 6415.73073319698,
5532.81932688235, 4129.74247991983, 181.982555943441, 100.618132944011, 94.7873468732274,
79.9530013088968, 53.5252945970547, 44.8289180396562, 42.8596473840972, 25.6307046439277,
20.3918156601766, 1.31072529295606e-12, -1.13462801844856e-13, -5.44666605019582e-13
#>
#> Beginning fit attempt 2 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  6601095.82283506, 5884957.27595184,
```

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```
4997211.5585578, 33835.7281392408, 25546.9749292466, 19029.476552032, 6415.73073319698,
5532.81932688235, 4129.74247991983, 181.982555943441, 100.618132944011, 94.7873468732274,
79.9530013088968, 53.5252945970547, 44.8289180396562, 42.8596473840972, 25.6307046439277,
20.3918156601766, 1.31072529295606e-12, -1.13462801844856e-13, -5.44666605019582e-13
#>
#> Beginning fit attempt 3 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 4 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 5 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 6 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 7 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 8 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 9 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  6601088.97399675, 5884924.03105509,
4997187.3384105, 33835.7182300425, 25547.0001922894, 19029.4840324672, 6415.75614913858,
5532.81787527253, 4129.73167799008, 181.996394587361, 100.609164554844, 94.7759943426682,
79.9453900594674, 53.5140108644588, 44.8246739431028, 42.8450973504757, 25.6258354092028,
20.3815240500986, 6.16505777537203e-13, 2.5651786073209e-13, -2.16989767119613e-13
#>
#> Beginning fit attempt 10 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

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#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 11 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 12 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 13 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 14 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 15 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 16 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 17 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 18 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 19 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

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#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 20 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 21 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 22 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 23 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 24 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 25 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 26 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 27 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 28 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

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#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 29 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 30 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 31 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 32 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 33 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 34 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 35 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 36 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 37 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

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#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 38 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 39 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 40 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 41 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 42 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 43 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 44 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 45 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 46 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

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#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 47 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 48 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 49 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 50 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 51 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 52 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 53 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 54 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 55 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 56 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  6601087.41717247, 5884924.95278238,
4997188.90058811, 33835.7167207346, 25547.0055232612, 19029.4953432556, 6415.76686925221,
5532.81867012338, 4129.7376508035, 181.986008500145, 100.620327596628, 94.7790428699021,
79.9519683552524, 53.5216207335994, 44.8336254225469, 42.8527648001271, 25.6319154403186,
20.3863170836942, 6.99479984922054e-13, 9.30968411034054e-14, -3.30358421049018e-13
#>
#> Beginning fit attempt 57 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 58 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 59 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 60 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 61 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 62 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 63 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

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#>
#> Beginning fit attempt 64 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 65 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 66 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>   Not all eigenvalues of the Hessian are positive:  6601109.08246696, 5884947.58284532,
4997212.67554497, 33835.7475217275, 25547.0523993032, 19029.5266460778, 6415.72156832278,
5532.86440584908, 4129.73379150847, 181.989883642834, 100.616502846603, 94.777491744562,
79.944409438864, 53.5200980408997, 44.8285767584618, 42.8527764308985, 25.6328031638815,
20.3857394806038, -1.5617330235165e-14, -5.49428719566624e-13, -1.26465426614862e-12
#>
#> Beginning fit attempt 67 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 68 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 69 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 70 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 71 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 72 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

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#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 73 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 74 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 75 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 76 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 77 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 78 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 79 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 80 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 81 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 82 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 83 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 84 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 85 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 86 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 87 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 88 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 89 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 90 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 91 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 92 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  6601090.77278791, 5884914.41790775,
4997185.40557213, 33835.6162286929, 25546.955346815, 19029.4910081279, 6415.75295265211,
5532.79695272054, 4129.73460147897, 181.991384263567, 100.609673264193, 94.7723735898081,
79.9431581753051, 53.5132731323771, 44.8283366059591, 42.8455856785077, 25.6206176738567,
20.3709515580155, 4.10973959494918e-13, 2.8786924695039e-13, -5.88236346695321e-13
#>
#> Beginning fit attempt 93 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 94 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 95 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 96 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 97 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 98 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 99 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  6601089.07674119, 5884924.34148392,
4997188.10371485, 33835.7220828766, 25546.9971339811, 19029.4932670773, 6415.75670080034,
5532.81470842082, 4129.73251358533, 181.993011413989, 100.609448163748, 94.7772205619988,
79.9430784303375, 53.5174213469996, 44.8280033229548, 42.8480289739224, 25.62768864109,
20.3765025447222, -3.98686796469645e-14, -3.0703531054449e-13, -4.60507766966373e-13
#>
#> Beginning fit attempt 100 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 101 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 102 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  6601089.33592808, 5884918.31711901,
4997182.51826171, 33835.7092134569, 25546.993786254, 19029.486557512, 6415.76353452525,
5532.82161169771, 4129.73142052977, 181.988125585639, 100.612098332653, 94.7774370509922,
79.9516284705769, 53.5142909709808, 44.8319731639484, 42.8540689261746, 25.6235380049316,
20.385351802117, 8.51555230495825e-14, -4.79642668226953e-13, -1.55575207227756e-12
#>
#> Beginning fit attempt 103 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 104 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 105 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 106 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 107 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 108 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>   Not all eigenvalues of the Hessian are positive:  6601133.15407204, 5884948.95521143,
4997216.18855063, 33835.8104925551, 25547.0733721336, 19029.5219737432, 6415.78083464179,
5532.81527257133, 4129.74444045845, 181.991989025934, 100.609031236261, 94.7731305226842,
79.9493628889413, 53.517113260114, 44.8301992205824, 42.8473724292362, 25.6236917236037,
20.3791761880534, 1.28597596155249e-12, 6.19276069342762e-13, -8.33709909982435e-13
#>
#> Beginning fit attempt 109 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 110 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 111 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 112 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 113 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 114 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 115 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 116 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 117 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 118 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 119 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 120 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 121 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 122 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 123 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 124 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 125 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 126 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 127 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 128 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  6601088.40752552, 5884923.48118532,
4997187.52202121, 33835.6956553478, 25547.0055293203, 19029.4951519554, 6415.7719179594,
5532.82132386932, 4129.73277890684, 181.989673159935, 100.618562084604, 94.7812883595889,
79.9474631014827, 53.5235386502447, 44.8285422243581, 42.8527277998836, 25.6298593089758,
20.3835575916976, 8.12564218751832e-13, 4.66107619456021e-13, -1.59823910356047e-13
#>
#> Beginning fit attempt 129 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 130 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 131 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 132 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#> 
#> Beginning fit attempt 133 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 134 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 135 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 136 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 137 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 138 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 139 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 140 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 141 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 142 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 143 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 144 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 145 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 146 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 147 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 148 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 149 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 150 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 151 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 152 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 153 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 154 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 155 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 156 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 157 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 158 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 159 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 160 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 161 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 162 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 163 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 164 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 165 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 166 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 167 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 168 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 169 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 170 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>   Not all eigenvalues of the Hessian are positive:  6601081.1401284, 5884922.09011023,
4997187.21284176, 33835.7724680788, 25546.9890492862, 19029.5039437271, 6415.76727305576,
5532.81738879123, 4129.74803222133, 181.993855148767, 100.609280237018, 94.7761150139698,
79.9470754819448, 53.5134870835574, 44.8259503691206, 42.8473897709631, 25.6230249697535,
20.3786751420802, 2.69292405444122e-13, -5.78913492427385e-13, -8.52158291207837e-13
#>
#> Beginning fit attempt 171 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 172 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 173 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 174 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 175 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 176 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 177 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 178 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 179 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 180 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 181 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 182 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 183 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 184 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 185 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 186 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 187 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 188 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 189 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 190 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 191 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-558.72094 (started at -6.7974252)  (192 attempt(s):
13 valid, 179 errors)
#>  Start values from best fit:
#> -0.103705552057583,0.915457126670401,-0.428670870909886,-0.227606629478667,-0.794291870454002,0.7
#> Running CTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:   -543.888428582046
#>  Not all eigenvalues of the Hessian are positive:  6150260.94362492, 5566656.51259407,
4514589.16339363, 23590.0600956735, 20860.317795504, 18411.1798754831, 3791.72370358406,
2926.31949553765, 2777.86046128106, 288.126408400806, 235.226756705047, 198.139993031335,
108.307296338033, 89.1862820584061, 74.6135373449039, 18.4430751794626, 16.4236458338243,
13.8454281846419, 1.71281785037644e-13, 3.52840127135444e-14, -3.60085065490694e-12
#>
```

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```
#> Beginning fit attempt 1 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  6150260.94362492, 5566656.51259407,
4514589.16339363, 23590.0600956735, 20860.317795504, 18411.1798754831, 3791.72370358406,
2926.31949553765, 2777.86046128106, 288.126408400806, 235.226756705047, 198.139993031335,
108.307296338033, 89.1862820584061, 74.6135373449039, 18.4430751794626, 16.4236458338243,
13.8454281846419, 1.71281785037644e-13, 3.52840127135444e-14, -3.60085065490694e-12
#>
#> Beginning fit attempt 2 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:   -543.888428582234
#>
#> Solution found


#>
#>  Solution found!   Final fit=-543.88843 (started at -5.3076202)  (3 attempt(s):
3 valid, 0 errors)
#>  Start values from best fit:
#> -0.227028172645491,1.04493473316817,-0.664506090796889,-0.0243774756817781,-0.560229208176711,0.8
#> Running CTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:   -547.617460309084
#>  Not all eigenvalues of the Hessian are positive:  8022830.47447198, 5072944.67374533,
3355294.54006256, 27441.1789702244, 20923.1302723172, 12695.7644224422, 6269.67813159471,
2529.57099546534, 2351.67833098301, 184.953292879416, 120.338799577286, 91.3349558786784,
29.7572486725371, 19.8744482231952, 14.9757691078092, 5.24076413458822, 2.94827281373011,
2.60313833867872, -4.93780964663582e-14, -1.96132735037194e-13, -5.09208372859775e-13
#>
#> Beginning fit attempt 1 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  8022830.47447198, 5072944.67374533,
3355294.54006256, 27441.1789702244, 20923.1302723172, 12695.7644224422, 6269.67813159471,
2529.57099546534, 2351.67833098301, 184.953292879416, 120.338799577286, 91.3349558786784,
29.7572486725371, 19.8744482231952, 14.9757691078092, 5.24076413458822, 2.94827281373011,
2.60313833867872, -4.93780964663582e-14, -1.96132735037194e-13, -5.09208372859775e-13
#>
#> Beginning fit attempt 2 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  8022715.92325734, 5072724.7893777,
3355084.14203355, 27442.1695331507, 20922.4354903963, 12695.7926478733, 6269.62002094074,
2529.64510322111, 2351.76954991987, 184.954253890364, 120.348588765651, 91.3346573834203,
```

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```
29.7549910339458, 19.8732710339767, 14.9729143005845, 5.24028650094204, 2.94827611289995,
2.59987077200094, 1.44765851538666e-12, 6.79347475100782e-13, -1.60879077055077e-13
#>
#> Beginning fit attempt 3 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 4 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 5 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 6 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 7 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  8022782.59286009, 5072944.34588117,
3355299.26591163, 27441.1432790412, 20923.1182241058, 12695.8079089164, 6269.63728337127,
2529.57291338153, 2351.69162888627, 184.951527539179, 120.344540095613, 91.3318703912869,
29.747944620165, 19.8697152521176, 14.9673227273327, 5.23816160284044, 2.94898674022241,
2.59763842432164, 6.31865642615036e-13, 2.8075025852963e-14, -1.67751046851283e-13
#>
#> Beginning fit attempt 8 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 9 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 10 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 11 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 12 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 13 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 14 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 15 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 16 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 17 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 18 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 19 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 20 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 21 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 22 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 23 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 24 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 25 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 26 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 27 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 28 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 29 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 30 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 31 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 32 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 33 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 34 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 35 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 36 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 37 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 38 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 39 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 40 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 41 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 42 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 43 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 44 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 45 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 46 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#> 
#> Beginning fit attempt 47 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 48 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 49 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 50 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 51 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 52 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 53 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 54 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 55 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 56 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 57 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 58 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 59 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 60 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 61 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 62 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 63 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 64 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 65 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 66 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 67 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 68 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 69 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 70 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 71 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 72 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 73 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 74 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 75 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 76 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 77 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 78 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 79 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 80 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 81 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 82 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 83 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 84 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 85 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 86 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 87 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 88 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 89 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 90 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 91 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 92 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 93 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 94 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 95 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 96 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 97 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  8022830.21330154, 5072943.98907204,
3355295.78489992, 27441.1809184599, 20923.1223076058, 12695.7683606333, 6269.67767028163,
2529.56570788156, 2351.67926560311, 184.953553221452, 120.338706084636, 91.3356706356404,
29.7512297281358, 19.874083928802, 14.9754893573558, 5.24063191979416, 2.94801175168313,
2.60373306459692, 6.01917420692237e-13, -3.28066571043646e-15, -3.87342231987984e-13
#>
#> Beginning fit attempt 98 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 99 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 100 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 101 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  8022817.55924739, 5073041.47942028,
3355164.66978496, 27441.5552795144, 20922.9158167279, 12695.528756044, 6269.77805774919,
2529.52424953879, 2351.6541552002, 184.958112668096, 120.343801131076, 91.3351813663788,
29.7559571414629, 19.8717989664258, 14.9739732538868, 5.24371112906827, 2.94762035863778,
2.6014806419151, 3.66977012813097e-14, -6.57210405515919e-13, -7.31917631268594e-13
#>
#> Beginning fit attempt 102 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:   -547.61746030922
#>  Not all eigenvalues of the Hessian are positive:  8022826.75706218, 5072940.18388057,
3355297.0680284, 27441.1405367132, 20923.1290658373, 12695.7693138479, 6269.6711606912,
2529.56379177095, 2351.67729776392, 184.95176127386, 120.344166242875, 91.3323893751727,
29.7529683438406, 19.8707287065245, 14.9705655073829, 5.24112103056438, 2.947366896649,
2.60049090022413, 7.59328352712151e-14, -1.03059609727766e-13, -5.35407621224639e-13
#>
#> Beginning fit attempt 103 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  8022826.75706218, 5072940.18388057,
3355297.0680284, 27441.1405367132, 20923.1290658373, 12695.7693138479, 6269.6711606912,
2529.56379177095, 2351.67729776392, 184.95176127386, 120.344166242875, 91.3323893751727,
29.7529683438406, 19.8707287065245, 14.9705655073829, 5.24112103056438, 2.947366896649,
2.60049090022413, 7.59328352712151e-14, -1.03059609727766e-13, -5.35407621224639e-13
#>
#> Beginning fit attempt 104 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 105 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 106 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 107 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 108 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 109 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 110 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 111 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 112 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 113 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 114 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 115 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 116 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 117 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 118 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 119 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 120 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 121 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 122 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 123 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 124 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 125 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>  Not all eigenvalues of the Hessian are positive:  8022801.69567491, 5072962.8627998,
3355290.62573114, 27441.1613602606, 20923.0838657568, 12695.7890290133, 6269.65807325343,
2529.56430962984, 2351.67961052107, 184.949010971505, 120.349570437247, 91.3301278316372,
29.7508460199715, 19.8673555862713, 14.9653904998321, 5.23776052055055, 2.94393178102405,
2.5990690184116, 9.00849690543566e-14, -3.31176664881909e-13, -5.60785967997563e-13
#>
#> Beginning fit attempt 126 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 127 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 128 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:   -547.617460309489
#>  Not all eigenvalues of the Hessian are positive:  8022710.58804034, 5072940.48582259,
3355283.20822058, 27440.9140727741, 20922.9445279909, 12695.7063668627, 6269.60043671248,
2529.55177584862, 2351.66186704645, 184.958374397042, 120.336307736788, 91.3359273381203,
29.7625665409837, 19.877495131278, 14.9730755561814, 5.24445753180498, 2.94902451739308,
2.60318769220762, 3.71079026065592e-13, 7.9275984416254 7e-14, -1.25557530323611e-13
#>
#> Beginning fit attempt 129 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  8022710.58804034, 5072940.48582259,
3355283.20822058, 27440.9140727741, 20922.9445279909, 12695.7063668627, 6269.60043671248,
2529.55177584862, 2351.66186704645, 184.958374397042, 120.336307736788, 91.3359273381203,
29.7625665409837, 19.877495131278, 14.9730755561814, 5.24445753180498, 2.94902451739308,
2.60318769220762, 3.71079026065592e-13, 7.92759844162547e-14, -1.25557530323611e-13
#>
#> Beginning fit attempt 130 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 131 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 132 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 133 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 134 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  8022816.59749788, 5072927.33953346,
3355285.12260114, 27441.0547450652, 20923.0924720157, 12695.7245877461, 6269.66918962847,
2529.55835230573, 2351.66556094155, 184.955012979984, 120.337758340141, 91.3362613787684,
29.7581892209838, 19.8748016997762, 14.9724516293156, 5.24501099291048, 2.94983803900962,
2.60329599106688, -1.49600827763354e-13, -4.21512114103057e-13, -8.79407317971611e-13
#>
#> Beginning fit attempt 135 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 136 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 137 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 138 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 139 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 140 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 141 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 142 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 143 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 144 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 145 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  8022832.4085727, 5072944.50595584,
3355293.96533032, 27441.1858658065, 20923.1367486576, 12695.7710665013, 6269.6826944788,
2529.57491243218, 2351.68311037291, 184.961829522979, 120.325232556828, 91.3417377110057,
29.7676501753616, 19.8843469386976, 14.9803080281726, 5.25330821734346, 2.95447886413625,
2.6101604111717, 1.66056488271289e-13, -1.20996119869653e-14, -5.85443322094688e-13
#>
#> Beginning fit attempt 146 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 147 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 148 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 149 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 150 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 151 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 152 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 153 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 154 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 155 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  8022703.68174454, 5072924.11032522,
3355305.50881969, 27441.0702102448, 20923.0193260701, 12695.7128134816, 6269.60348724963,
2529.56774086332, 2351.67646151435, 184.954509713214, 120.343184887282, 91.3324106169355,
29.7515425654327, 19.870839747759, 14.9655042143731, 5.24248823205292, 2.94804640918379,
2.59846599305065, 4.81696513102925e-13, -8.87127300320402e-14, -1.26348112338955e-13
#>
#> Beginning fit attempt 156 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 157 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

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```
#>
#> Beginning fit attempt 158 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 159 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 160 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 161 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-547.61746 (started at -2.5283486)  (162 attempt(s):
15 valid, 147 errors)
#>  Start values from best fit:
#> -0.315164675750558,1.61648554890635,-0.629251633769797,-0.108105227997034,-1.3140884568321,1.4992
#> Running CTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 21 parameters
#>
#>  Lowest minimum so far:   -562.122183370942
#>  OpenMx status code 6 not in list of acceptable status codes, (0,0)
#>  Not all eigenvalues of the Hessian are positive:  5851031.21736294, 5629694.09376671,
3554946.57232471, 28720.6864837261, 20347.5062391708, 18805.6496137964, 5970.16671990624,
3744.11438333109, 3476.36594761352, 452.03850338215, 359.553172900063, 288.296082199787,
154.105560021419, 122.689006531592, 98.0779721193517, 3.42538957272857, 2.8140524152474,
2.2070128149823, 1.23750462809212e-12, 1.08304824377456e-12, -3.30478101299577e-13
#>
#> Beginning fit attempt 1 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  OpenMx status code 6 not in list of acceptable status codes, (0,0)
#>  Not all eigenvalues of the Hessian are positive:  5851031.21736294, 5629694.09376671,
3554946.57232471, 28720.6864837261, 20347.5062391708, 18805.6496137964, 5970.16671990624,
3744.11438333109, 3476.36594761352, 452.03850338215, 359.553172900063, 288.296082199787,
```

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154.105560021419, 122.689006531592, 98.0779721193517, 3.42538957272857, 2.8140524152474,
2.2070128149823, 1.23750462809212e-12, 1.08304824377456e-12, -3.30478101299577e-13
#>
#> Beginning fit attempt 2 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 3 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 4 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 5 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 6 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 7 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Lowest minimum so far:    -562.122192724741
#>   Not all eigenvalues of the Hessian are positive:  5852057.23701668, 5628241.78164509,
3556263.77526637, 28722.1453253343, 20348.0986556125, 18806.3998560258, 5970.48913104595,
3744.24342394449, 3476.21540931207, 452.015871660719, 359.607056590699, 288.287686939775,
154.097326331931, 122.705620943507, 98.0732869138078, 3.42015756398699, 2.81635644118451,
2.20616329661481, 9.11227810254219e-13, -7.42743649563902e-13, -1.0340695420905e-12
#>
#> Beginning fit attempt 8 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>   Not all eigenvalues of the Hessian are positive:  5852057.23701668, 5628241.78164509,
3556263.77526637, 28722.1453253343, 20348.0986556125, 18806.3998560258, 5970.48913104595,
3744.24342394449, 3476.21540931207, 452.015871660719, 359.607056590699, 288.287686939775,
154.097326331931, 122.705620943507, 98.0732869138078, 3.42015756398699, 2.81635644118451,
2.20616329661481, 9.11227810254219e-13, -7.42743649563902e-13, -1.0340695420905e-12
```

```
#>
#> Beginning fit attempt 9 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 10 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 11 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 12 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 13 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 14 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 15 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 16 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 17 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 18 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 19 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 20 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 21 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 22 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 23 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 24 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 25 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 26 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 27 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 28 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 29 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 30 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 31 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 32 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 33 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 34 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 35 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

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#>
#> Beginning fit attempt 36 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 37 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 38 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>   Not all eigenvalues of the Hessian are positive:  5852073.8570574, 5628726.00122141,
3556298.46729428, 28720.3274610083, 20349.5265292815, 18807.0399392197, 5970.07011913266,
3744.08835327806, 3476.03230415732, 452.017094591389, 359.593398770525, 288.319357438334,
154.09945766935, 122.707778299599, 98.0861502450998, 3.42944304312397, 2.82116534941461,
2.21161624522774, 9.22283700853941e-13, 1.81557282545769e-13, -1.38224508015809e-13
#>
#> Beginning fit attempt 39 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 40 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 41 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 42 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 43 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 44 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

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#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 45 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 46 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 47 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 48 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 49 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 50 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 51 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 52 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 53 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

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#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 54 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 55 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 56 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 57 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 58 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 59 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 60 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 61 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 62 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 63 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 64 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 65 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 66 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 67 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 68 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 69 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 70 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 71 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

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#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 72 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 73 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 74 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 75 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 76 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 77 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 78 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 79 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 80 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 81 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 82 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 83 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 84 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 85 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 86 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 87 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 88 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 89 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 90 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  5852059.46561388, 5628241.97582775,
3556266.05090841, 28722.1463698282, 20348.1047309462, 18806.4114957833, 5970.48656116437,
3744.2506245754, 3476.21389079392, 452.017592297872, 359.603097402242, 288.28518635237,
154.093658405287, 122.705250754657, 98.0684427840315, 3.42125739616443, 2.81786676115768,
2.20378242986092, 7.64687736978256e-13, 7.14047952146354e-13, -1.9781587464831.4e-13
#>
#> Beginning fit attempt 91 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 92 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 93 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 94 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 95 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 96 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 97 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 98 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  5851913.39222205, 5628036.05531631,
3556240.7133011, 28721.4934186311, 20347.752398008, 18806.3292875036, 5970.41034607495,
3744.23269526568, 3476.15041196158, 452.024950544069, 359.591017929908, 288.292305683246,
154.099710022924, 122.704675503065, 98.0750326673229, 3.42917231870718, 2.82161128798509,
2.20752369608038, 6.4485323652309e-13, 3.41091310000327e-13, -9.71678180935843e-13
#>
#> Beginning fit attempt 99 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 100 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 101 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 102 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 103 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 104 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 105 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 106 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>  Not all eigenvalues of the Hessian are positive:  5852068.9882275, 5628252.93851378,
3556268.34447391, 28722.187477052, 20348.1346772845, 18806.4398067071, 5970.50308646454,
3744.25286227003, 3476.22515089739, 452.021037341896, 359.60191971612, 288.295437130966,
154.099911225135, 122.708109646127, 98.0741990714421, 3.42245675143597, 2.8217000103247,
2.20843835238693, 5.81474013726233e-12, 2.87702809011683e-13, -1.19173511003361e-13
#>
#> Beginning fit attempt 107 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 108 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 109 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 110 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 111 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 112 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 113 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 114 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 115 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 116 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 117 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 118 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 119 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 120 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 121 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 122 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 123 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 124 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 125 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 126 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 127 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 128 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 129 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 130 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 131 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 132 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 133 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 134 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 135 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  5852059.74615395, 5628240.44282343,
3556262.43951899, 28722.1445824149, 20348.0892871473, 18806.4047925261, 5970.49065140287,
3744.24683582182, 3476.21270318206, 452.01724867532, 359.604939321167, 288.287222315852,
154.098850446547, 122.703272357488, 98.0750665075352, 3.42253740309698, 2.81614669253401,
2.20788624078076, 3.92775831736519e-13, -5.33172044675408e-13, -1.59044148259316e-12
#>
#> Beginning fit attempt 136 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 137 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 138 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 139 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 140 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 141 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 142 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 143 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 144 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 145 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 146 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 147 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 148 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 149 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 150 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 151 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 152 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 153 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 154 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 155 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 156 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 157 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 158 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 159 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

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#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 160 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 161 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 162 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 163 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 164 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 165 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 166 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 167 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 168 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 169 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 170 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 171 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 172 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 173 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 174 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 175 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  5852054.2019142, 5628234.17754461,
3556260.00976937, 28722.1294457353, 20348.0684951766, 18806.3950300883, 5970.4904745476,
3744.2464949725, 3476.21117348404, 452.022226650318, 359.60480691998, 288.284506736274,
154.09834329649, 122.705526734159, 98.0754763695166, 3.42472211720192, 2.8201689665161,
2.20728514063772, 1.30195081329339e-12, 1.16243435412419e-13, -1.14058298303353e-12
#>
#> Beginning fit attempt 176 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

234

```
#>
#> Beginning fit attempt 177 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 178 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 179 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 180 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 181 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 182 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 183 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 184 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 185 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 186 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 187 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 188 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 189 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 190 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 191 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 192 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 193 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 194 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#> 
#> Beginning fit attempt 195 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 196 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 197 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 198 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 199 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Lowest minimum so far:    -562.122192724771
#>   Not all eigenvalues of the Hessian are positive:  5852057.93676402, 5628245.16980522,
3556263.55602276, 28722.159938237, 20348.103118747, 18806.4129260069, 5970.49116776913,
3744.25287983711, 3476.21831638309, 452.024527641862, 359.599003657675, 288.296172405378,
154.101793587442, 122.710659658928, 98.0754308843253, 3.42962951124919, 2.82022902713549,
2.2102363359968, -5.70847954829314e-13, -1.0640044156649e-12, -1.62770452095265e-12
#> 
#> Beginning fit attempt 200 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>   Not all eigenvalues of the Hessian are positive:  5852057.93676402, 5628245.16980522,
3556263.55602276, 28722.159938237, 20348.103118747, 18806.4129260069, 5970.49116776913,
3744.25287983711, 3476.21831638309, 452.024527641862, 359.599003657675, 288.296172405378,
154.101793587442, 122.710659658928, 98.0754308843253, 3.42962951124919, 2.82022902713549,
2.2102363359968, -5.70847954829314e-13, -1.0640044156649e-12, -1.62770452095265e-12
#> 
#> Beginning fit attempt 201 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>   Fit attempt generated errors
#> 
#> Beginning fit attempt 202 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 203 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 204 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 205 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 206 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 207 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 208 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 209 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 210 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 211 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

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#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 212 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 213 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 214 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 215 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 216 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 217 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 218 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 219 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  5852060.05493978, 5628250.2898652,
3556244.19343134, 28722.1719653403, 20348.0744849105, 18806.3848326959, 5970.50035348927,
3744.25272522807, 3476.21931972958, 452.029125553993, 359.599064799054, 288.299803767459,
154.106956717508, 122.708383490588, 98.0803806870461, 3.43469539437524, 2.82446223143438,
2.21199145072187, 7.51372104398523e-13, 6.84979552140481e-13, -4.97047467226401e-13
```

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#>
#> Beginning fit attempt 220 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 221 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 222 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 223 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 224 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 225 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 226 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 227 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 228 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
```

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#>
#> Beginning fit attempt 229 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 230 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 231 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 232 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 233 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 234 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 235 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 236 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 237 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#> 
#> Beginning fit attempt 238 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 239 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 240 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 241 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 242 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 243 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 244 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 245 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 246 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 247 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 248 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 249 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 250 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 251 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 252 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  5852059.51592649, 5628240.59986634,
3556261.22855756, 28722.1174924319, 20348.1064795397, 18806.4439083071, 5970.4954319074,
3744.25848153002, 3476.21707463271, 452.027779768048, 359.601750733275, 288.295531871535,
154.105938626112, 122.705502315543, 98.078926509607, 3.42940964252592, 2.82186584527027,
2.21334279501889, 9.43034989332856e-13, 5.60408231887319e-13, -1.44981945006394e-12
#>
#> Beginning fit attempt 253 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 254 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 255 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

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#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 256 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 257 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 258 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 259 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 260 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 261 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 262 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 263 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 264 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 265 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 266 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 267 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 268 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 269 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  5852058.81044332, 5628246.02472023,
3556266.81683465, 28722.1482667058, 20348.1125609924, 18806.4170863723, 5970.49295222081,
3744.25605033182, 3476.21495092698, 452.018382170776, 359.606598432823, 288.281593196829,
154.096026837096, 122.705091460154, 98.0696973377509, 3.41871670439901, 2.81733167551286,
2.20481950521124, 5.68486239147365e-13, -1.63713620191263e-13, -1.02461013365469e-12
#>
#> Beginning fit attempt 270 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 271 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 272 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 273 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 274 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 275 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 276 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 277 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 278 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 279 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 280 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 281 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
```

```
#> 
#> Beginning fit attempt 282 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 283 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 284 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 285 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 286 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 287 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 288 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 289 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
#> 
#> Beginning fit attempt 290 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> 
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 291 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 292 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 293 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 294 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 295 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 296 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 297 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 298 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 299 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 300 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  5852072.26922022, 5628244.29232224,
3556255.64389909, 28722.1646661461, 20348.0873123337, 18806.415256929, 5970.49841276761,
3744.24510523206, 3476.21175954416, 452.015680717746, 359.609396586091, 288.283412328278,
154.097530133781, 122.703330339444, 98.0708154559284, 3.41789228645244, 2.81557698166137,
2.20345136043749, 2.25659084688637e-13, 1.6247143421068e-13, -6.12062503420158e-13
#>
#> Beginning fit attempt 301 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 302 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 303 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  5852067.72975608, 5628248.84013862,
3556246.6373246, 28722.1304332478, 20348.0914079099, 18806.4254701563, 5970.50410872214,
3744.24450303059, 3476.21912461955, 452.027029014886, 359.599545778929, 288.294930973079,
154.100472916155, 122.708520816869, 98.0757930399017, 3.42876160241839, 2.82260150731722,
2.2098108599861, 6.52755457461842e-13, -6.69233797946e-13, -1.50574844900786e-12
#>
#> Beginning fit attempt 304 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 305 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 306 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 307 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 308 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 309 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 310 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>   Not all eigenvalues of the Hessian are positive:  5852050.42995494, 5628230.35129775,
3556263.07418952, 28722.12243032, 20348.0705147924, 18806.3847884197, 5970.48684322295,
3744.25723049689, 3476.21045996197, 452.01755456708, 359.605959097434, 288.287777321118,
154.098542354363, 122.705588773624, 98.0702616404635, 3.42203388049732, 2.8168823094653,
2.20559848450474, 4.92840998731721e-12, 1.23395889764205e-12, -5.20715075693308e-13
#>
#> Beginning fit attempt 311 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 312 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 313 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 314 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 315 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 316 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 317 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 318 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 319 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 320 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 321 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 322 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 323 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 324 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 325 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 326 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 327 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 328 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 329 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 330 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 331 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 332 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 333 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  5852057.4803686, 5628250.81678085,
3556269.99572562, 28722.1762175922, 20348.1187607712, 18806.4014808601, 5970.48790897447,
3744.24603038197, 3476.21498350297, 452.014894089259, 359.603439166778, 288.287036526188,
154.089167642733, 122.703980757255, 98.0668602855465, 3.41672978971877, 2.81489188316865,
2.20569353441489, 4.23159381130818e-13, -6.72471558056222e-13, -1.07890313906455e-12
```

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```
#>
#> Beginning fit attempt 334 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 335 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 336 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 337 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 338 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 339 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 340 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 341 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 342 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 343 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 344 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 345 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 346 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 347 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 348 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 349 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 350 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 351 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 352 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 353 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>   Not all eigenvalues of the Hessian are positive:  5852061.35016572, 5628245.52079045,
3556264.885243, 28722.1594212887, 20348.1071738911, 18806.4172467032, 5970.49610650159,
3744.25198504685, 3476.21766750406, 452.019653528592, 359.603813963532, 288.291454473416,
154.098723961714, 122.707845659321, 98.0719458218754, 3.42149095419778, 2.81779584507327,
2.20890237102769, 6.54809842575103e-13, -6.87648393731685e-13, -1.34855644737491e-12
#>
#> Beginning fit attempt 354 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 355 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 356 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 357 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 358 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 359 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>   Fit attempt generated errors
#>
#> Beginning fit attempt 360 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 361 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 362 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 363 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 364 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 365 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 366 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 367 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 368 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 369 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 370 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 371 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 372 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 373 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 374 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 375 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 376 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 377 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 378 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 379 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  5852144.18852108, 5628211.98341559,
3556223.83712698, 28722.0023169688, 20348.1346981051, 18806.6963266337, 5970.58056817472,
3744.23613249708, 3476.20441165522, 452.015256435421, 359.605374642817, 288.288495665226,
154.098681078367, 122.708296995628, 98.0720788926935, 3.42388084515807, 2.81524881796885,
2.20594904647975, 7.22064085167884e-13, -4.98946775834867e-13, -1.21132682376143e-12
#>
#> Beginning fit attempt 380 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 381 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>  Not all eigenvalues of the Hessian are positive:  5852073.09879083, 5628333.24208634,
3556196.40798236, 28722.1684519363, 20348.147867925, 18806.477321746, 5970.5366021262,
3744.2286056687, 3476.24503696867, 452.023198632276, 359.603951534097, 288.286613993604,
154.10450521426, 122.711000996785, 98.0773797367541, 3.42929239106794, 2.81817148105815,
2.20854711618144, 1.33735625760101e-12, -3.05144123469292e-13, -8.03894770751559e-13
#>
#> Beginning fit attempt 382 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 383 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 384 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 385 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 386 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
```

```
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 387 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 388 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 389 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 390 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 391 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-562.12219 (started at 3.9616684)   (392 attempt(s):
23 valid, 369 errors)
#>  Start values from best fit:
#> -2.0103777328639,1.47142391283323,-0.00757129556759384,0.910647432272881,-0.884129168433305,0.41
```

```
#> Test passed
```

```
#> test-external-fitCTVARMx-fit-ct-var-id-mx-sigma-full
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:    -544.478694984847
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-544.47869 (started at -495.99832)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.323004224957597,0.961809221938366,0.0127733694026625,0.0168091033416267,2.2250738585072e-308,0
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:   -561.739850809038
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-561.73985 (started at -535.26324)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.81408194692281,1.46290039791364,-0.813286516808161,0.37344549440014,-1.8252290827217,1.288062
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:   -530.128797998621
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-530.1288 (started at -479.46733)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> -0.806456450479808,0.35421423162192,-1.11169695286209,0.213379315803061,-0.469256686455923,1.2350
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:   -560.730943890522
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-560.73094 (started at -537.64217)  (1 attempt(s):
1 valid, 0 errors)
```

```
#>  Start values from best fit:
#> -0.778189200326735,0.831622152343296,-0.185699536424032,-0.0665572133196183,-0.311891689279158,0.
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:   -527.747181003314
#>
#> Solution found


#>
#>  Solution found!   Final fit=-527.74718 (started at -496.403)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> -0.296872622635194,0.589831051639694,-0.0537697164565205,-0.00413785235532606,-0.366533592410351,
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:   -515.647049027443
#>
#> Solution found


#>
#>  Solution found!   Final fit=-515.64705 (started at -444.71109)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.542108156565097,0.782001231493522,-0.181882905390619,-0.329685721282513,-0.552601319186223,0.7
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:   -554.852279012486
#>
#> Solution found


#>
#>  Solution found!   Final fit=-554.85228 (started at -488.54129)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.115866003756176,0.929049802369371,-0.390658409794393,-0.2279301305083,-0.835430992041625,0.673
#> Running CTVAR with 15 parameters
```

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```
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:   -543.663576297259
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-543.66358 (started at -464.98637)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.225786916444052,1.04576392660248,-0.680518306572626,-0.0257669451555867,-0.562148305932505,0.8
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:   -547.614158619903
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-547.61416 (started at -504.33797)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.314844662091818,1.62752248419245,-0.62680893810657,-0.108526713428531,-1.32898512873374,1.4960
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:   -562.122192724722
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-562.12219 (started at -456.43272)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -2.01051624814236,1.47166540978341,-0.00750242480357601,0.910734566079079,-0.884266447003289,0.41
#>
#> Means of the estimated paramaters per individual.
#>       phi_11        phi_21        phi_31        phi_12        phi_22        phi_32
```

```
#> -0.622772643  1.005637991 -0.403905034  0.075176390 -0.713634324  0.915159599
#>       phi_13       phi_23       phi_33     sigma_11     sigma_21     sigma_22
#> -0.081074543 -0.028120778 -0.916352663  0.097319279 -0.001932265  0.102988227
#>     sigma_31     sigma_32     sigma_33
#> -0.002834571 -0.004174192  0.098574690
#>
#> Estimated paramaters per individual.
#>           phi_11    phi_21       phi_31       phi_12        phi_22     phi_32
#>  [1,] -0.3230042 0.9618092  0.012773369  0.016809103  2.225074e-308 0.7921400
#>  [2,] -0.8140819 1.4629004 -0.813286517  0.373445494  -1.825229e+00 1.2880623
#>  [3,] -0.8064565 0.3542142 -1.111696953  0.213379316  -4.692567e-01 1.2350220
#>  [4,] -0.7781892 0.8316222 -0.185699536 -0.066557213  -3.118917e-01 0.8916269
#>  [5,] -0.2968726 0.5898311 -0.053769716 -0.004137852  -3.665336e-01 0.7905746
#>  [6,] -0.5421082 0.7820012 -0.181882905 -0.329685721  -5.526013e-01 0.7027483
#>  [7,] -0.1158660 0.9290498 -0.390658410 -0.227930131  -8.354310e-01 0.6731642
#>  [8,] -0.2257869 1.0457639 -0.680518307 -0.025766945  -5.621483e-01 0.8690058
#>  [9,] -0.3148447 1.6275225 -0.626808938 -0.108526713  -1.328985e+00 1.4960454
#> [10,] -2.0105162 1.4716654 -0.007502425  0.910734566  -8.842664e-01 0.4132065
#>           phi_13       phi_23      phi_33   sigma_11       sigma_21   sigma_22
#>  [1,]  0.08840636 -0.56469370 -0.8385261 0.09309783 -0.0141015149 0.11274568
#>  [2,] -0.20434325  0.41838091 -0.6889753 0.07903658  0.0009793277 0.10818999
#>  [3,]  0.01543956 -0.10582678 -1.4436532 0.10626584  0.0031713931 0.12280044
#>  [4,]  0.07251318  0.06435477 -0.7023924 0.09066825 -0.0005336911 0.09434035
#>  [5,]  0.07005007 -0.61492605 -0.8289618 0.12548090  0.0160711375 0.10100048
#>  [6,]  0.34728292  0.02252493 -0.7352232 0.10523954 -0.0125212412 0.09245910
#>  [7,] -0.04932064 -0.38956098 -0.5737924 0.09386044  0.0016824729 0.09413924
#>  [8,] -0.02058781  0.10641727 -1.2215418 0.10512128 -0.0075506608 0.09951230
#>  [9,]  0.01946389  0.53702681 -1.3584121 0.07118881  0.0116773669 0.11034317
#> [10,] -1.14964971  0.24509505 -0.7720483 0.10323331 -0.0181972368 0.09435152
#>           sigma_31      sigma_32   sigma_33
#>  [1,] -0.012694006 -0.0195610583 0.08900849
#>  [2,]  0.005121575 -0.0073289572 0.10546168
#>  [3,]  0.005864497 -0.0082857447 0.08628956
#>  [4,] -0.001227480  0.0030136774 0.09122133
#>  [5,] -0.006447073  0.0063260361 0.08612976
#>  [6,] -0.010971009  0.0092605956 0.12486556
#>  [7,] -0.019629038 -0.0152710108 0.09491203
#>  [8,]  0.004138134 -0.0008087281 0.08762176
#>  [9,]  0.001638730 -0.0151565497 0.13091962
#> [10,]  0.005859960  0.0060698234 0.08931712
#> Test passed
#>
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
```

```
#>
#>  Lowest minimum so far:    -544.478694984805
#>
#> Solution found


#>
#>  Solution found!   Final fit=-544.47869 (started at -516.0749)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> -0.323004167214596,0.96180852023837,0.0127729950695135,0.0168092864690903,-2.84027755503606e-16,0
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:    -561.739850809024
#>
#> Solution found


#>
#>  Solution found!   Final fit=-561.73985 (started at -550.31747)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.814081783337753,1.46290044850959,-0.813286311740759,0.37344521521633,-1.82522916580889,1.28806
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:    -530.128797998671
#>
#> Solution found


#>
#>  Solution found!   Final fit=-530.1288 (started at -515.49081)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> -0.806456103953956,0.354213496616861,-1.11169698636291,0.213379248864925,-0.469256408255578,1.235
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:    -560.730943890519
```

```
#>
#> Solution found


#>
#>  Solution found!    Final fit=-560.73094 (started at -552.13253)   (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.778189315076308,0.831622196295001,-0.18569946048096,-0.0665572171321834,-0.311891687064236,0.8
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:    -527.747181003318
#>
#> Solution found


#>
#>  Solution found!    Final fit=-527.74718 (started at -515.48459)   (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.296872360689489,0.589831234052497,-0.0537695083412031,-0.00413807992909451,-0.366533814819467,
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:    -515.6470490275
#>
#> Solution found


#>
#>  Solution found!    Final fit=-515.64705 (started at -504.20914)   (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.542108120105703,0.782001529842719,-0.181883081354926,-0.329685713810818,-0.552601334762666,0.7
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:    -554.852279012477
#>
#> Solution found
```

```
#>
#>  Solution found!    Final fit=-554.85228 (started at -540.95527)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.11586595342274,0.929049784910021,-0.390658515407065,-0.227930215154206,-0.835431021349192,0.67
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:    -543.663576297242
#>
#> Solution found
```

```
#>
#>  Solution found!    Final fit=-543.66358 (started at -534.0984)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> -0.225786944141687,1.04576309103134,-0.680517934419909,-0.0257672602696668,-0.562147782019841,0.8
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:    -547.614158619913
#>
#> Solution found
```

```
#>
#>  Solution found!    Final fit=-547.61416 (started at -529.27184)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.314844887277231,1.62752183008779,-0.626808665416823,-0.108526682448881,-1.32898468871142,1.496
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:    -562.122192724769
#>
#> Solution found
```

```
#>
#>  Solution found!    Final fit=-562.12219 (started at -540.5606)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> -2.01051703354169,1.4716652389055,-0.00750232893488285,0.910735078755536,-0.884266398983294,0.413
```

```
#> test-external-fitCTVARMx-fit-ct-var-id-mx-theta-diag
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:    -535.979542158082
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-535.97954 (started at 34.488312)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> -0.286300263636573,0.895094161302931,-0.0287200128933307,-0.00829372779429341,2.2250738585072e-3
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:    -562.133056801865
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-562.13306 (started at 3.4673123)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> -0.817154257297246,1.48088365031799,-0.633553906698926,0.375561593711867,-1.82803437636299,1.057
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:    -529.082648162138
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-529.08265 (started at 28.931579)  (1 attempt(s):  1
valid, 0 errors)
```

```
#> Start values from best fit:
#> -0.810295188703564,0.375306454015772,-1.04076131946293,0.204110885940088,-0.45311524724394,1.1922
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:   -560.613954606751
#>
#> Solution found


#>
#>  Solution found!   Final fit=-560.61395 (started at 11.961722)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> -0.770576531496461,0.83128740662383,-0.208024772741117,-0.0679030908018397,-0.32206838056611,0.9
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:   -524.940338665813
#>
#> Solution found


#>
#>  Solution found!   Final fit=-524.94034 (started at 10.679318)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> -0.346744309940516,0.658771304579526,-0.0868740648275428,0.110577875592109,-0.415205258496557,0.8
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:   -512.63408788511
#>
#> Solution found


#>
#>  Solution found!   Final fit=-512.63409 (started at 63.430627)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> -0.551285647093947,0.761763201756309,-0.198710940827743,-0.355055794328152,-0.566585143416963,0.7
#> Running CTVAR with 15 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:   -550.481864303734
#>
#> Solution found


#>
#>  Solution found!   Final fit=-550.48186 (started at 38.520388)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> -0.0771936130806768,0.938868792811629,-0.445003162077866,-0.25348101789783,-0.836262098089743,0.
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:   -543.192904463068
#>
#> Solution found


#>
#>  Solution found!   Final fit=-543.1929 (started at 45.193342)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> -0.209020370407115,1.03210913852307,-0.659836058912393,-0.0470233851098833,-0.553107958922531,0.8
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:   -544.500050620922
#>
#> Solution found


#>
#>  Solution found!   Final fit=-544.50005 (started at 19.898216)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> -0.372334847993099,1.7475741363108,-0.463795272616311,-0.0261470463561863,-1.3829294835073,1.2911
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
```

```
#>
#>  Lowest minimum so far:    -558.031184104828
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-558.03118 (started at 74.447526)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> -1.76198036612329,1.24886385283075,0.0023434296770763,0.763068596328305,-0.758216543581061,0.4102
```

```
#>
#> Means of the estimated paramaters per individual.
#>         phi_11         phi_21         phi_31         phi_12         phi_22
#> -6.002885e-01  9.970522e-01 -3.762936e-01  6.954149e-02 -7.115524e-01
#>         phi_32         phi_13         phi_23         phi_33       sigma_11
#>  8.714824e-01 -8.638159e-02 -4.662372e-02 -8.717812e-01  9.589111e-02
#>       sigma_22       sigma_33       theta_11       theta_22       theta_33
#>  1.017412e-01  9.199985e-02  6.118757e-05  5.432107e-05  3.094618e-04
#>
#> Estimated paramaters per individual.
#>           phi_11    phi_21      phi_31         phi_12        phi_22    phi_32
#>  [1,] -0.28630026 0.8950942 -0.02872001 -0.008293728  2.225074e-308 0.7525036
#>  [2,] -0.81715426 1.4808837 -0.63355391  0.375561594  -1.828034e+00 1.0576653
#>  [3,] -0.81029519 0.3753065 -1.04076132  0.204110886  -4.531152e-01 1.1922941
#>  [4,] -0.77057653 0.8312874 -0.20802477 -0.067903091  -3.220684e-01 0.9113753
#>  [5,] -0.34674431 0.6587713 -0.08687406  0.110577876  -4.152053e-01 0.8250234
#>  [6,] -0.55128565 0.7617632 -0.19871094 -0.355055794  -5.665851e-01 0.7264675
#>  [7,] -0.07719361 0.9388688 -0.44500316 -0.253481018  -8.362621e-01 0.7003891
#>  [8,] -0.20902037 1.0321091 -0.65983606 -0.047023385  -5.531080e-01 0.8477054
#>  [9,] -0.37233485 1.7475741 -0.46379527 -0.026147046  -1.382929e+00 1.2911573
#> [10,] -1.76198037 1.2488639  0.00234343  0.763068596  -7.582165e-01 0.4102427
#>           phi_13      phi_23      phi_33    sigma_11   sigma_22   sigma_33
#>  [1,]  0.08972985 -0.57109983 -0.7931024 0.09260832 0.11268256 0.08862798
#>  [2,] -0.19775332  0.40628433 -0.5340649 0.07899988 0.10782497 0.08050380
#>  [3,]  0.04816418 -0.16981574 -1.4175196 0.10627539 0.12259933 0.08605711
#>  [4,]  0.07160870  0.07620181 -0.7164468 0.08981581 0.09443386 0.09134222
#>  [5,] -0.03730894 -0.55992834 -0.8478085 0.12613771 0.10134117 0.08618941
#>  [6,]  0.33619445  0.04325585 -0.7512478 0.10530430 0.09256003 0.12505677
#>  [7,] -0.14144687 -0.44355149 -0.4926811 0.08256355 0.08644852 0.06592476
#>  [8,]  0.01412054  0.09744492 -1.1790426 0.10489161 0.09570137 0.07767172
#>  [9,] -0.04044612  0.52486139 -1.2188832 0.07154668 0.11069828 0.12930536
#> [10,] -1.00667833  0.13010992 -0.7670152 0.10076784 0.09312197 0.08931940
#>           theta_11      theta_22      theta_33
#>  [1,] 2.225074e-308 2.225074e-308 2.225074e-308
#>  [2,] 2.225074e-308 2.225074e-308  1.200140e-03
```

```
#>  [3,] 2.225074e-308 2.225074e-308 2.225074e-308
#>  [4,]  3.901509e-05 2.225074e-308 2.225074e-308
#>  [5,] 2.225074e-308 2.225074e-308  3.894284e-18
#>  [6,] 2.225074e-308 2.225074e-308 2.225074e-308
#>  [7,]  5.728606e-04  3.637101e-04  1.406505e-03
#>  [8,] 2.225074e-308  1.795007e-04  4.879725e-04
#>  [9,] 2.225074e-308 2.225074e-308 2.225074e-308
#> [10,] 2.225074e-308 2.225074e-308 2.225074e-308
#> Test passed

#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:   -535.979545247852
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-535.97955 (started at 14.599975)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> -0.286414254918389,0.895155696995819,-0.028505352997287,-0.00825612181751279,2.2250738585072e-308
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:   -562.133056801896
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-562.13306 (started at -9.6437091)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.817156744484259,1.48088328780934,-0.633554341493949,0.37556301888519,-1.8280336282765,1.05766
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:   -529.082648162141
#>
```

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```
#> Solution found
```

```
#>
#>  Solution found!    Final fit=-529.08265 (started at 0.67625989)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.810295048899606,0.375306507205779,-1.04076124192263,0.20411074727684,-0.453115354751989,1.1922
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:    -560.613954611829
#>
#> Solution found
```

```
#>
#>  Solution found!    Final fit=-560.61395 (started at -1.1440285)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.770581802026034,0.83129039923815,-0.208023081952194,-0.067903846153046,-0.322070175077217,0.9
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:    -524.94033866583
#>
#> Solution found
```

```
#>
#>  Solution found!    Final fit=-524.94034 (started at -5.7169562)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.346744741521502,0.65877087574385,-0.086874172953882,0.110578104895164,-0.415205668286614,0.825
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:    -512.634087858098
#>
#> Solution found
```

```
#>
#>  Solution found!    Final fit=-512.63409 (started at 22.524012)   (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> -0.551301670637,0.761760908617604,-0.198726346305328,-0.355080857385843,-0.566593394629901,0.726
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#> Lowest minimum so far:   -550.481864304463
#>
#> Solution found


#>
#>  Solution found!    Final fit=-550.48186 (started at -6.7974252)   (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.0771938823700997,0.938868588502576,-0.445003127159072,-0.253480624907305,-0.836261614266521,0.
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#> Lowest minimum so far:   -543.192904463065
#>
#> Solution found


#>
#>  Solution found!    Final fit=-543.1929 (started at -5.3076202)   (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> -0.209020575709801,1.03210946226594,-0.659835688014657,-0.0470233463011013,-0.553107929610003,0.8
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#> Lowest minimum so far:   -544.500050620922
#>
#> Solution found


#>
#>  Solution found!    Final fit=-544.50005 (started at -2.5283486)   (1 attempt(s):
1 valid, 0 errors)
```

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```
#>  Start values from best fit:
#> -0.372334803797962,1.74757413711678,-0.463795380401323,-0.0261471087542217,-1.3829294606402,1.29
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#>  Lowest minimum so far:    -558.031184104803
#>
#> Solution found


#>
#>  Solution found!    Final fit=-558.03118 (started at 3.9616684)   (1 attempt(s):   1
valid, 0 errors)
#>  Start values from best fit:
#> -1.76197943005949,1.24886319843536,0.00234385254499015,0.763068036304622,-0.758216564739773,0.41(

#> Test passed

#> test-external-fitCTVARMx-fit-ct-var-id-mx-theta-null
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:    -535.979545303293
#>
#> Solution found


#>
#>  Solution found!    Final fit=-535.97955 (started at -495.99832)   (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.286419758609655,0.895144996218525,-0.0284412423732209,-0.0082640609232989,-3.08775726898311e-1
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:    -561.070716085788
#>
#> Solution found


#>
#>  Solution found!    Final fit=-561.07072 (started at -535.26324)   (1 attempt(s):
1 valid, 0 errors)
```

```
#>  Start values from best fit:
#> -0.816068043984246,1.47244363457974,-0.638888238600876,0.372705117936146,-1.81489687102436,1.109
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:   -529.082648162144
#>
#> Solution found


#>
#>  Solution found!   Final fit=-529.08265 (started at -479.46733)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.810295084841163,0.37530637164248,-1.04076109315336,0.204110779103599,-0.453115249664412,1.1922
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:   -560.612123099411
#>
#> Solution found


#>
#>  Solution found!   Final fit=-560.61212 (started at -537.64217)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.778335518500668,0.831095092290686,-0.207879892147311,-0.0650537129275512,-0.321991140206117,0.
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:   -524.94033866583
#>
#> Solution found


#>
#>  Solution found!   Final fit=-524.94034 (started at -496.403)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> -0.346744768682544,0.658770854369149,-0.086874188707888,0.110578141833681,-0.415205685165933,0.82
#> Running CTVAR with 12 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:    -512.634087885478
#>
#> Solution found


#>
#>  Solution found!    Final fit=-512.63409 (started at -444.71109)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.55128594759575,0.761763101404336,-0.198710838385083,-0.355055492596023,-0.566584315572436,0.72
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:    -547.990828868771
#>
#> Solution found


#>
#>  Solution found!    Final fit=-547.99083 (started at -488.54129)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.102312429278226,0.942780876960757,-0.414655497055917,-0.24104564728416,-0.850071497419234,0.65
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:    -542.960696002023
#>
#> Solution found


#>
#>  Solution found!    Final fit=-542.9607 (started at -464.98637)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> -0.20889468718131,1.03008309264961,-0.673263442423876,-0.0471430350633757,-0.552485551212291,0.86
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
```

```
#>
#>  Lowest minimum so far:    -544.500050620907
#>
#> Solution found


#>
#>  Solution found!    Final fit=-544.50005 (started at -504.33797)  (1 attempt(s):
#> 1 valid, 0 errors)
#>  Start values from best fit:
#> -0.372334980581452,1.74757424131736,-0.463795442453169,-0.026147003942
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:    -558.031184104828
#>
#> Solution found


#>
#>  Solution found!    Final fit=-558.03118 (started at -456.43272)  (1 attempt(s):
#> 1 valid, 0 errors)
#>  Start values from best fit:
#> -1.76198015722375,1.24886373827479,0.00234347786462007,0.763068443644726,-0.758216525285823,0.410

#>
#> Means of the estimated paramaters per individual.
#>       phi_11       phi_21       phi_31       phi_12       phi_22       phi_32
#> -0.60346714   0.99638260  -0.37509264   0.07077535  -0.71154962   0.87403070
#>       phi_13       phi_23       phi_33     sigma_11     sigma_22     sigma_33
#> -0.08404499  -0.04892543  -0.89351644   0.09710037   0.10292187   0.09831419
#>
#> Estimated paramaters per individual.
#>              phi_11       phi_21         phi_31         phi_12         phi_22       phi_32
#>  [1,] -0.2864198  0.8951450  -0.028441242  -0.008264061  -3.087757e-14  0.7522675
#>  [2,] -0.8160680  1.4724436  -0.638888239   0.372705118  -1.814897e+00  1.1097920
#>  [3,] -0.8102951  0.3753064  -1.040761093   0.204110779  -4.531152e-01  1.1922940
#>  [4,] -0.7783355  0.8310951  -0.207879892  -0.065053713  -3.219911e-01  0.9113343
#>  [5,] -0.3467448  0.6587709  -0.086874189   0.110578142  -4.152057e-01  0.8250235
#>  [6,] -0.5512859  0.7617631  -0.198710838  -0.355055493  -5.665843e-01  0.7264666
#>  [7,] -0.1023124  0.9427809  -0.414655497  -0.241045647  -8.500715e-01  0.6574175
#>  [8,] -0.2088947  1.0300831  -0.673263442  -0.047143035  -5.524856e-01  0.8643121
#>  [9,] -0.3723350  1.7475742  -0.463795442  -0.026147004  -1.382929e+00  1.2911569
#> [10,] -1.7619802  1.2488637   0.002343478   0.763068444  -7.582165e-01  0.4102427
#>              phi_13       phi_23     phi_33     sigma_11     sigma_22     sigma_33
#>  [1,]  0.08972252  -0.57112310  -0.7928190  0.09260981  0.11268120  0.08862439
```

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```
#>  [2,] -0.19328161  0.39175848 -0.6372763 0.07901290 0.10805787 0.10499608
#>  [3,]  0.04816415 -0.16981551 -1.4175193 0.10627541 0.12259931 0.08605712
#>  [4,]  0.07018085  0.07615759 -0.7164280 0.09066660 0.09443070 0.09134324
#>  [5,] -0.03730923 -0.55992842 -0.8478083 0.12613772 0.10134113 0.08618941
#>  [6,]  0.33619397  0.04325559 -0.7512464 0.10530428 0.09255979 0.12505678
#>  [7,] -0.12195616 -0.44584338 -0.5712409 0.09375297 0.09432193 0.09468333
#>  [8,]  0.01495990  0.09131346 -1.2149274 0.10492951 0.09940646 0.08756682
#>  [9,] -0.04044610  0.52486114 -1.2188836 0.07154667 0.11069829 0.12930534
#> [10,] -1.00667823  0.13010990 -0.7670152 0.10076783 0.09312197 0.08931941
#> Test passed
```

#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#> Lowest minimum so far: -535.979545303292
#>
#> Solution found

#>
#> Solution found!   Final fit=-535.97955 (started at -516.0749) (1 attempt(s): 1 valid, 0 errors)
#> Start values from best fit:
#> -0.286419759477208,0.89514526877191,-0.0284412598060402,-0.00826412280061554,2.2250738585072e-308
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#> Lowest minimum so far: -561.070716085796
#>
#> Solution found

#>
#> Solution found!   Final fit=-561.07072 (started at -550.31747) (1 attempt(s): 1 valid, 0 errors)
#> Start values from best fit:
#> -0.816068033419094,1.4724432933283,-0.638887851446413,0.372705278098248,-1.8148964718354,1.10979
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#> Lowest minimum so far: -529.082648162143

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-529.08265 (started at -515.49081)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.810294783906773,0.375306460017436,-1.04076108582465,0.204110751549053,-0.45311520868845,1.1922
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:   -560.612123099413
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-560.61212 (started at -552.13253)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.778335633643543,0.831095158757084,-0.207880116253813,-0.0650535813732113,-0.321991284424586,0.
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:   -524.94033866583
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-524.94034 (started at -515.48459)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.346744737271842,0.658770957119251,-0.0868742779570846,0.110578078336794,-0.415205716415459,0.8
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:   -512.634087885479
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-512.63409 (started at -504.20914)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.551285939569459,0.761763084271664,-0.198710800475859,-0.355055595541156,-0.566584200583811,0.7
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:   -547.99082886877
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-547.99083 (started at -540.95527)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.102312493268101,0.942780770618847,-0.414655459662668,-0.241045604517094,-0.850071391943233,0.6
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:   -542.960696002028
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-542.9607 (started at -534.0984)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> -0.208894894724266,1.0300830921788,-0.673263392600758,-0.0471430013244983,-0.552485559825697,0.86
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:   -544.500050620922
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=-544.50005 (started at -529.27184)  (1 attempt(s):
1 valid, 0 errors)
```

```
#>  Start values from best fit:
#> -0.372334812098574,1.74757409195524,-0.463795380066834,-0.0261471229672713,-1.382929380614,1.291
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:   -558.031184104825
#>
#> Solution found


#>
#>  Solution found!   Final fit=-558.03118 (started at -540.5606)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> -1.7619792495282,1.24886330640017,0.0023436197205935,0.763067929811907,-0.758216149668633,0.4102

#> Test passed

#> test-external-fitCTVARMx-fit-ct-var-mx-theta-null
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:   -5350.18640781427
#>
#> Solution found


#>
#>  Solution found!   Final fit=-5350.1864 (started at -5052.8608)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.36621279742891,0.784646946173951,-0.611762107141402,-0.065202091271941,-0.499533378379859,0.69

#> Summary of CTVAR
#>
#> free parameters:
#>       name          matrix  row  col    Estimate    Std.Error A
#> 1    phi_11    CTVAR_1.phi eta1 eta1 -0.36621280 0.107561951
#> 2    phi_21    CTVAR_1.phi eta2 eta1  0.78464695 0.105727732
#> 3    phi_31    CTVAR_1.phi eta3 eta1 -0.61176211 0.105054673
#> 4    phi_12    CTVAR_1.phi eta1 eta2 -0.06520209 0.077436418
#> 5    phi_22    CTVAR_1.phi eta2 eta2 -0.49953338 0.077104259
#> 6    phi_32    CTVAR_1.phi eta3 eta2  0.69682042 0.076299669
#> 7    phi_13    CTVAR_1.phi eta1 eta3  0.02436498 0.061044782
```

```
#> 8    phi_23   CTVAR_1.phi eta2 eta3  0.04148270 0.060619892
#> 9    phi_33   CTVAR_1.phi eta3 eta3 -0.64302950 0.060393026
#> 10 sigma_11 CTVAR_1.sigma eta1 eta1  0.09978154 0.004606894
#> 11 sigma_22 CTVAR_1.sigma eta2 eta2  0.09876120 0.004496913
#> 12 sigma_33 CTVAR_1.sigma eta3 eta3  0.09755663 0.004423399
#>                  lbound                ubound
#> 1                       2.2250738585072e-308
#> 2
#> 3
#> 4
#> 5                       2.2250738585072e-308
#> 6
#> 7
#> 8
#> 9                       2.2250738585072e-308
#> 10 2.2250738585072e-308
#> 11 2.2250738585072e-308
#> 12 2.2250738585072e-308
#>
#> Model Statistics:
#>                | Parameters | Degrees of Freedom | Fit (-2lnL units)
#>       Model:            12                 2988            -5350.186
#>    Saturated:           NA                   NA                   NA
#> Independence:           NA                   NA                   NA
#> Number of observations/statistics: 1000/3000
#>
#> Information Criteria:
#>       | df Penalty | Parameters Penalty | Sample-Size Adjusted
#> AIC:      -11326.19           -5326.186             -5325.870
#> BIC:      -25990.56           -5267.293             -5305.406
#> CFI: NA
#> TLI: 1   (also known as NNFI)
#> RMSEA:  0  [95% CI (NA, NA)]
#> Prob(RMSEA <= 0.05): NA
#> To get additional fit indices, see help(mxRefModels)
#> timestamp: 2024-07-26 01:05:30
#> Wall clock time: 5.97084 secs
#> optimizer:  SLSQP
#> OpenMx version number: 2.21.11
#> Need help?  See help(mxSummary)
#>
#> Summary of CTVAR
#>
#> free parameters:
#>      name        matrix  row  col    Estimate   Std.Error A
#> 1    phi_11   CTVAR_1.phi eta1 eta1 -0.36621280 0.107561951
```

```
#> 2     phi_21   CTVAR_1.phi eta2 eta1   0.78464695 0.105727732
#> 3     phi_31   CTVAR_1.phi eta3 eta1  -0.61176211 0.105054673
#> 4     phi_12   CTVAR_1.phi eta1 eta2  -0.06520209 0.077436418
#> 5     phi_22   CTVAR_1.phi eta2 eta2  -0.49953338 0.077104259
#> 6     phi_32   CTVAR_1.phi eta3 eta2   0.69682042 0.076299669
#> 7     phi_13   CTVAR_1.phi eta1 eta3   0.02436498 0.061044782
#> 8     phi_23   CTVAR_1.phi eta2 eta3   0.04148270 0.060619892
#> 9     phi_33   CTVAR_1.phi eta3 eta3  -0.64302950 0.060393026
#> 10 sigma_11 CTVAR_1.sigma eta1 eta1   0.09978154 0.004606894
#> 11 sigma_22 CTVAR_1.sigma eta2 eta2   0.09876120 0.004496913
#> 12 sigma_33 CTVAR_1.sigma eta3 eta3   0.09755663 0.004423399
#>                  lbound              ubound
#> 1                       2.2250738585072e-308
#> 2
#> 3
#> 4
#> 5                       2.2250738585072e-308
#> 6
#> 7
#> 8
#> 9                       2.2250738585072e-308
#> 10 2.2250738585072e-308
#> 11 2.2250738585072e-308
#> 12 2.2250738585072e-308
#>
#> Model Statistics:
#>                | Parameters | Degrees of Freedom | Fit (-2lnL units)
#>        Model:           12               2988           -5350.186
#>    Saturated:           NA                 NA                  NA
#> Independence:           NA                 NA                  NA
#> Number of observations/statistics: 1000/3000
#>
#> Information Criteria:
#>       | df Penalty | Parameters Penalty |  Sample-Size Adjusted
#> AIC:     -11326.19               -5326.186               -5325.870
#> BIC:     -25990.56               -5267.293               -5305.406
#> CFI: NA
#> TLI: 1   (also known as NNFI)
#> RMSEA:  0  [95% CI (NA, NA)]
#> Prob(RMSEA <= 0.05): NA
#> To get additional fit indices, see help(mxRefModels)
#> timestamp: 2024-07-26 01:05:30
#> Wall clock time: 5.97084 secs
#> optimizer:  SLSQP
#> OpenMx version number: 2.21.11
#> Need help?  See help(mxSummary)
```

```
#>
#> Test passed

#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#>  Lowest minimum so far:    -5350.18640781427
#>
#> Solution found
```

```
#>
#>  Solution found!    Final fit=-5350.1864 (started at -5341.6601)  (1 attempt(s):
1 valid, 0 errors)
#>  Start values from best fit:
#> -0.366212801549025,0.784646965124075,-0.611762117097702,-0.0652020681370616,-0.499533387842193,0.
```

```
#> Test passed
#> [[1]]
#> [[1]][[1]]
#> [[1]][[1]]$value
#> [[1]][[1]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[1]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[2]]
#> [[1]][[2]]$value
#> [[1]][[2]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[2]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[3]]
#> [[1]][[3]]$value
#> [[1]][[3]]$value[[1]]
#> [1] TRUE
#>
#>
```

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```
#> [[1]][[3]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[4]]
#> [[1]][[4]]$value
#> [[1]][[4]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[4]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[5]]
#> [[1]][[5]]$value
#> [[1]][[5]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[5]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[6]]
#> [[1]][[6]]$value
#> [[1]][[6]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[6]]$visible
#> [1] TRUE
```

Environment

```
ls()

#> [1] "root"
```

Class

```
#> [[1]]
#> [1] "root_criterion"
```

References

R Core Team. (2024). *R: A language and environment for statistical computing.* R Foundation for Statistical Computing. Vienna, Austria. https://www.R-project.org/