

# fitCTVARMx: Internal Tests

Ivan Jacob Agaloos Pesigan

## Tests

```
#> test-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: -2707.31197426421
#>
#> Solution found
```

```
#>
#> Solution found! Final fit=-2707.312 (started at -2583.5637) (1 attempt(s): 1
valid, 0 errors)
#> Start values from best fit:
#> -0.545410808015616,0.655791704057053,-0.4319181053049,0.0684713570989829,-0.1952231790709,0.85913
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#> Lowest minimum so far: -2726.62588111983
#>
#> Solution found
```

```
#>
#> Solution found! Final fit=-2726.6259 (started at -2584.9163) (1 attempt(s):
1 valid, 0 errors)
#> Start values from best fit:
#> -0.213900151770005,0.861186849501166,-0.405561461480421,-0.131907517647472,-0.523808720935904,0.8
#>
#> Means of the estimated paramaters per individual.
#>      phi_11      phi_21      phi_31      phi_12      phi_22      phi_32
#> -0.37965548  0.75848928 -0.41873978 -0.03171808 -0.35951595  0.86221607
```

```

#>      phi_13      phi_23      phi_33      sigma_11      sigma_22      sigma_33
#> 0.02195558 -0.08616503 -0.86629112 0.09721581 0.10211013 0.10053139
#>
#> Estimated paramaters per individual.
#>      phi_11      phi_21      phi_31      phi_12      phi_22      phi_32
#> [1,] -0.5454108 0.6557917 -0.4319181 0.06847136 -0.1952232 0.8591364
#> [2,] -0.2139002 0.8611868 -0.4055615 -0.13190752 -0.5238087 0.8652957
#>      phi_13      phi_23      phi_33      sigma_11      sigma_22      sigma_33
#> [1,] -0.05178730 -0.25075038 -0.7402852 0.10027176 0.10763468 0.09333226
#> [2,] 0.09569846 0.07842031 -0.9922970 0.09415987 0.09658558 0.10773053
#> Test passed

#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#> Lowest minimum so far: -2707.31197426421
#>
#> Solution found

```

```

#>
#> Solution found! Final fit=-2707.312 (started at -2692.6342) (1 attempt(s): 1
valid, 0 errors)
#> Start values from best fit:
#> -0.545410822968464,0.655791720204795,-0.431918099282865,0.0684713331800128,-0.195223149243982,0.8591364
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#> Lowest minimum so far: -2726.62588111933
#>
#> Solution found

```

```

#>
#> Solution found! Final fit=-2726.6259 (started at -2715.8485) (1 attempt(s):
1 valid, 0 errors)
#> Start values from best fit:
#> -0.213900127082883,0.861186936784289,-0.405561515713572,-0.131907503993629,-0.523808771434401,0.8652957
#>
#> Means of the estimated paramaters per individual.
#>      phi_11      phi_21      phi_31      phi_12      phi_22      phi_32
#> -0.37965548 0.75848933 -0.41873981 -0.03171809 -0.35951596 0.86221611
#>      phi_13      phi_23      phi_33      sigma_11      sigma_22      sigma_33

```

```

#> 0.02195557 -0.08616504 -0.86629114 0.09721581 0.10211014 0.10053139
#>
#> Estimated paramaters per individual.
#>      phi_11    phi_21    phi_31    phi_12    phi_22    phi_32
#> [1,] -0.5454108 0.6557917 -0.4319181 0.06847133 -0.1952231 0.8591364
#> [2,] -0.2139001 0.8611869 -0.4055615 -0.13190750 -0.5238088 0.8652958
#>      phi_13    phi_23    phi_33    sigma_11    sigma_22    sigma_33
#> [1,] -0.05178729 -0.25075041 -0.7402852 0.10027176 0.10763469 0.09333226
#> [2,] 0.09569843 0.07842032 -0.9922971 0.09415987 0.09658559 0.10773052
#> Test passed

#> test-fitCTVARm-fit-ct-var-id-m-sigma-full-iota
#> Running CTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 21 parameters
#>
#> Lowest minimum so far: -2708.30352478403
#> Not all eigenvalues of the Hessian are positive: 30721089.926683, 24835803.7013657,
20405567.9407961, 108357.114679194, 97945.2541152169, 90869.5887398491, 17750.7056309224,
17431.0121237755, 16343.315479509, 584.689320235351, 551.851004503755, 493.793471345044,
140.979956008032, 134.124452176929, 121.424223969446, 48.0105428888939, 42.9996605685393,
39.7787612725842, 7.65259770560223e-12, -2.30723247017178e-14, -4.28597937797828e-12
#>
#> Beginning fit attempt 1 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> Not all eigenvalues of the Hessian are positive: 30721089.926683, 24835803.7013657,
20405567.9407961, 108357.114679194, 97945.2541152169, 90869.5887398491, 17750.7056309224,
17431.0121237755, 16343.315479509, 584.689320235351, 551.851004503755, 493.793471345044,
140.979956008032, 134.124452176929, 121.424223969446, 48.0105428888939, 42.9996605685393,
39.7787612725842, 7.65259770560223e-12, -2.30723247017178e-14, -4.28597937797828e-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
#>
#> Lowest minimum so far: -2708.30352549538
#> Not all eigenvalues of the Hessian are positive: 30715706.8728482, 24836590.5358908,
20405894.3730669, 108351.898153855, 97937.7532203766, 90869.6891813856, 17750.7957592189,
17431.2435509494, 16341.2121533136, 584.644701175653, 551.895939703819, 493.752025767895,
140.982024378236, 134.157791285035, 121.460361670245, 48.0623885084235, 43.0384155157616,
39.8161207636503, 1.63355527365454e-11, 1.09941780346191e-12, -6.00787897384488e-14
#>
#> Beginning fit attempt 8 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> Not all eigenvalues of the Hessian are positive: 30715706.8728482, 24836590.5358908,
20405894.3730669, 108351.898153855, 97937.7532203766, 90869.6891813856, 17750.7957592189,
17431.2435509494, 16341.2121533136, 584.644701175653, 551.895939703819, 493.752025767895,
140.982024378236, 134.157791285035, 121.460361670245, 48.0623885084235, 43.0384155157616,
39.8161207636503, 1.63355527365454e-11, 1.09941780346191e-12, -6.00787897384488e-14
#>
#> 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
#>
#> Lowest minimum so far: -2708.30352549541
#> Not all eigenvalues of the Hessian are positive: 30715706.9659415, 24836580.2893508,
20405879.3623156, 108351.873245002, 97937.7119097938, 90869.6424642795, 17750.8133976129,
17431.2066611489, 16341.1523589521, 584.681806734059, 551.854423308168, 493.810072454397,
140.894184721804, 134.092124349081, 121.373844675396, 48.0102016608476, 42.9643794036463,
39.7566684526914, 1.75644759243644e-12, -3.14743963304849e-14, -1.28427491537648e-11
#>
#> Beginning fit attempt 44 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#> Lowest minimum so far: -2708.30352549541
#> Not all eigenvalues of the Hessian are positive: 30715705.1893106, 24836575.810544,
20405884.6178586, 108351.937053222, 97937.7187516105, 90869.6607028926, 17750.8207399098,
17431.2658698877, 16341.2496155848, 584.694057743276, 551.881088604894, 493.828596745341,
140.954744164153, 134.138579623998, 121.403844293576, 48.0391336332164, 43.0008972237117,
39.7369950356169, 6.18073364046465e-12, 3.08746906672763e-13, -2.02998457521558e-11
#>
#> Beginning fit attempt 45 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> Not all eigenvalues of the Hessian are positive: 30715705.1893106, 24836575.810544,
20405884.6178586, 108351.937053222, 97937.7187516105, 90869.6607028926, 17750.8207399098,
17431.2658698877, 16341.2496155848, 584.694057743276, 551.881088604894, 493.828596745341,
140.954744164153, 134.138579623998, 121.403844293576, 48.0391336332164, 43.0008972237117,
39.7369950356169, 6.18073364046465e-12, 3.08746906672763e-13, -2.02998457521558e-11

```



```

#>
#> 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
#> Not all eigenvalues of the Hessian are positive: 30717060.8712311, 24836600.5285144,
20405889.4453853, 108353.42874307, 97939.9835101318, 90870.2957358815, 17750.8119641554,
17431.2447826678, 16341.7974441894, 584.657203810217, 551.858928399693, 493.81346058164,
140.962357686207, 134.129449590416, 121.468518562419, 48.0784541851803, 42.9635811522024,
39.7255261958166, 5.22765539586868e-12, -2.06797813070435e-14, -4.60114611205184e-13
#>
#> 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: 30715695.0839162, 24836562.6651325,
20405908.8966538, 108351.86308373, 97937.6822562411, 90869.6276370585, 17750.8157609522,
17431.2030457165, 16341.1427278637, 584.687563747292, 551.856402409007, 493.784200334367,
140.891302069538, 134.047609166527, 121.369977737849, 47.9912324315601, 42.9148671363952,
39.75501175134, 1.82692235776942e-11, 8.90537680292533e-13, -4.9773315761943e-12
#>
#> 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 worse than current best: -2708.30350283589 vs -2708.30352549541

```

```

#>
#> 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
#>
#> 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
#> Not all eigenvalues of the Hessian are positive: 30715678.2536344, 24836562.6665053,
20405905.9358458, 108351.885622622, 97937.7595957083, 90869.7208107442, 17750.9293851084,
17431.3274797417, 16341.2183198448, 584.646124095804, 551.940141318828, 493.804829188413,
141.051700130337, 134.247221379089, 121.526500756531, 48.0556255204337, 43.0430813123723,
39.8397577380906, 7.18507511447396e-12, 1.83269781627056e-13, -1.03575379670122e-12
#>
#> 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: 30715704.1301526, 24836579.4007772,
20405823.1355998, 108351.841277367, 97937.6069032196, 90869.5592581944, 17750.7383326593,
17431.2798736577, 16341.1932767745, 584.630833911009, 551.913535315842, 493.793100482192,
140.997931942715, 134.15384345131, 121.510099602978, 48.0653910790135, 42.9328860645493,
39.7479305696082, 2.53605463129373e-12, -1.1486191347544e-13, -5.93349626031202e-12
#>
#> 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
#> Not all eigenvalues of the Hessian are positive: 30715704.3365362, 24836584.3621128,
20405875.076203, 108351.995332334, 97937.7424206112, 90869.6887723899, 17750.8165846895,
17431.2982203892, 16341.2413482431, 584.664574717407, 551.94172271808, 493.744527826759,
141.032419185174, 134.271718730745, 121.558259686348, 48.085278238183, 43.0871100856103,
39.8486184076092, 1.986200284025e-13, -3.06060519309914e-13, -1.39268263935228e-11
#>
#> 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
#>
#> 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
#> Not all eigenvalues of the Hessian are positive: 30715695.5331405, 24836585.2116971,
20405894.6652154, 108351.948495484, 97937.6537396805, 90869.7322396999, 17750.8657521606,
17431.2058720678, 16341.2095283979, 584.659664614891, 551.900727627912, 493.812087183624,
141.005921518853, 134.170088139009, 121.52781037166, 48.0742695707266, 43.0319740535467,
39.7571763514333, 2.67696125178956e-11, 2.03712588179423e-12, -1.27719119657253e-13
#>
#> 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
#>
#> 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
#>
#> 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 worse than current best: -2708.2946470441 vs -2708.30352549541
#>
#> 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
#> Not all eigenvalues of the Hessian are positive: 30715063.9918804, 24838668.9133566,
20403261.0998505, 108354.526647478, 97933.4927446263, 90867.4474420607, 17748.9789699218,
17432.7294993657, 16341.1514872932, 584.635784425714, 551.838561305788, 493.759152406954,
140.932906338816, 134.085447053861, 121.349831097124, 47.9691913829243, 42.8946934276555,
39.7289059308208, 2.44115085735956e-12, -1.38100093323014e-13, -1.97648229527875e-11
#>
#> 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
#>
#> 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
#>
#> 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

```



```

#>
#> Solution found

#>
#> Solution found! Final fit=-2708.3035 (started at 59.80475) (259 attempt(s):
17 valid, 242 errors)
#> Start values from best fit:
#> -0.534241099292928,0.627973222897953,-0.434554171119096,0.0533438337696857,-0.18955284675482,0.8
#> Running CTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 21 parameters
#>
#> Lowest minimum so far: -2729.43541395444
#> Not all eigenvalues of the Hessian are positive: 29525705.9055929, 28656950.1464639,
23524019.7246255, 112732.481235427, 97113.196590124, 92650.4448569707, 21754.0295101035,
18545.9100880615, 17400.1035492018, 773.879972326702, 706.580507799201, 630.66509425964,
184.011610445327, 171.687958187791, 152.28119295692, 42.2538812076208, 38.8441241773105,
34.1236100199674, 9.93948942662182e-13, 6.32720234555393e-13, -5.67738984515497e-13
#>
#> Beginning fit attempt 1 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#> Lowest minimum so far: -2729.43541395448
#> Not all eigenvalues of the Hessian are positive: 29525739.4036879, 28656971.1045355,
23524038.5888871, 112732.579764377, 97113.2565793016, 92650.5162867427, 21754.0106222081,
18545.8878406483, 17400.1252515249, 773.951878435953, 706.49719744385, 630.610668165023,
183.908394629475, 171.593994560571, 152.236457680364, 42.2582365514802, 38.7628126694932,
34.0740821750434, 5.93743562836628e-13, -1.84067099774388e-13, -2.03015853623666e-12
#>
#> Beginning fit attempt 2 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> Not all eigenvalues of the Hessian are positive: 29525739.4036879, 28656971.1045355,
23524038.5888871, 112732.579764377, 97113.2565793016, 92650.5162867427, 21754.0106222081,
18545.8878406483, 17400.1252515249, 773.951878435953, 706.49719744385, 630.610668165023,
183.908394629475, 171.593994560571, 152.236457680364, 42.2582365514802, 38.7628126694932,
34.0740821750434, 5.93743562836628e-13, -1.84067099774388e-13, -2.03015853623666e-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
#> Not all eigenvalues of the Hessian are positive: 29525741.8033069, 28656955.3827152,
23524057.5356875, 112732.566366347, 97113.2306887274, 92650.3979880036, 21753.9594501939,
18545.8814181169, 17400.0932654079, 773.986656171722, 706.496625063001, 630.556078930272,
183.958997117967, 171.577623899275, 152.16807223827, 42.1910268088422, 38.7314209788174,
34.0157868263519, -7.22994533269393e-13, -3.80643940657952e-12, -5.12217898601747e-12
#>
#> 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
#> Not all eigenvalues of the Hessian are positive: 29525741.9873489, 28656968.5239177,
23524050.9219426, 112732.574710076, 97113.2752236527, 92650.522560513, 21753.9697591571,
18545.9107010584, 17400.1854835552, 773.914830171422, 706.569234598789, 630.631651449959,
183.936792038452, 171.624998670424, 152.25598570544, 42.2829929710169, 38.7571832189438,
34.0254323752104, 8.17682494219865e-13, -1.94640851459913e-12, -3.02373016173906e-12
#>
#> 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
#> Not all eigenvalues of the Hessian are positive: 29525775.933226, 28655928.1728051,
23524365.0371503, 112730.768365543, 97112.4501852887, 92651.7639775363, 21753.4403598343,
18545.8810215993, 17400.4354588855, 773.869497795007, 706.57070191229, 630.660297305275,
184.008024178248, 171.642750389495, 152.277045968719, 42.2756116527511, 38.7888729139154,
34.1007709048355, 3.64567249962886e-12, -1.99682932546146e-14, -3.06304329470609e-12
#>
#> 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
#> Not all eigenvalues of the Hessian are positive: 29525730.4634042, 28656974.3103924,
23524056.3344961, 112732.582977791, 97113.1934696705, 92650.4803718741, 21753.9494837179,
18545.9143750991, 17400.1296677412, 773.941162707554, 706.494054880175, 630.571030758762,

```

```

183.968316423153, 171.646886341459, 152.231812298102, 42.1949154459177, 38.7647950058211,
34.0140862343882, 1.68304814158063e-12, -3.73656860326691e-13, -8.42653523398855e-13
#>
#> 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
#> Not all eigenvalues of the Hessian are positive: 29525736.8838415, 28657024.6408473,
23524062.6761325, 112732.630776299, 97113.3284707772, 92650.5346408283, 21754.0039311092,
18545.8521545885, 17400.0503091336, 774.005983677288, 706.481946326594, 630.586815498558,
183.911695760163, 171.558432107162, 152.195022143055, 42.1540152488568, 38.6856623258791,
34.0502681981235, 4.89441249920646e-13, -5.91570677049449e-13, -7.31203981893331e-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
#>
#> 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
#> Not all eigenvalues of the Hessian are positive: 29525760.0116627, 28656973.5959768,
23524045.2201208, 112732.635240731, 97113.2097459104, 92650.558019943, 21754.0031551169,
18545.9509091518, 17400.1344956849, 773.880410672617, 706.539694313141, 630.653826653972,

```

```

183.973472894915, 171.702472954332, 152.298293700721, 42.2655847239414, 38.7901737708775,
34.1333637393962, 4.23989422124067e-12, -1.84848536476654e-13, -6.80856330067731e-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
#>
#> 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
#>
#> 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

```

```

#>
#> 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
#>
#> 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
#> Not all eigenvalues of the Hessian are positive: 29525729.6930637, 28657005.7938,
23523987.1907967, 112732.544445722, 97113.2664063021, 92650.4093966252, 21753.9996128592,
18545.8899391319, 17400.0715800531, 773.983772108653, 706.504054625285, 630.598526219419,
183.944965359693, 171.573940578845, 152.212955380933, 42.2345023688387, 38.7390767706284,
34.0457676545651, 4.70380765727845e-13, -6.61127832868245e-13, -1.19125864419941e-12
#>
#> 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
#>
#> 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
#>
#> 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
#>
#> 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
#> Not all eigenvalues of the Hessian are positive: 29525749.7347164, 28656968.824153,
23524080.6487796, 112732.690404207, 97113.2935964348, 92650.6084914341, 21754.0534587285,
18545.9851961081, 17400.1491062896, 773.875970767376, 706.606589747662, 630.661008214315,
184.005086661529, 171.713368963592, 152.288938229751, 42.2619208084545, 38.8650831247408,
34.1184351998702, 1.20272890967765e-12, -1.07767161246863e-12, -2.56022063564748e-12
#>
#> 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
#> Not all eigenvalues of the Hessian are positive: 29525757.5762296, 28656972.7325813,
23524065.6435333, 112732.553236468, 97113.2732552407, 92650.4739506866, 21753.9329888197,
18545.8387493246, 17400.0490670794, 774.055539723884, 706.462791148674, 630.53096723801,
183.856534594535, 171.559328268097, 152.122104201749, 42.1110158080641, 38.6467479266304,
33.9706690437921, -1.13034881199703e-12, -1.668592385382e-12, -3.33282097169182e-12
#>
#> 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
#>
#> 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
#>
#> 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
#>
#> 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
#> Not all eigenvalues of the Hessian are positive: 29525634.1763059, 28656963.2529723,
23524079.2064213, 112732.402500399, 97113.3760796509, 92650.4258423124, 21754.0545935455,
18545.9250384784, 17400.2003178169, 773.807229062602, 706.604344135197, 630.686816303726,
184.006308043853, 171.740291818103, 152.332646025746, 42.3319308507601, 38.8817982706203,
34.1617502527026, 8.91578021361128e-12, 6.1360122358871e-13, -4.67770694164301e-12
#>
#> 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
#> Not all eigenvalues of the Hessian are positive: 29525735.734734, 28656989.8876922,
23524054.4955585, 112732.581907985, 97113.2394431231, 92650.4340380208, 21754.0132953727,
18545.8716204665, 17400.0685339136, 773.944765639382, 706.51906159823, 630.625939578708,
183.957771748228, 171.550439840532, 152.155518914559, 42.1817643604818, 38.709261860006,
34.0234778029145, 1.2910868451124e-11, 3.76298528521548e-12, -5.29212796278591e-13
#>
#> 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
#> Not all eigenvalues of the Hessian are positive: 29525699.4691583, 28657173.5916786,
23524152.0061488, 112732.882264041, 97113.5827143076, 92650.6411348052, 21754.1280425521,
18545.8751741939, 17400.1150889154, 773.874426873797, 706.575192618631, 630.612859529736,
183.994811143456, 171.668948989454, 152.311799027186, 42.2552178429247, 38.8078660680914,
34.0812394255587, 1.32787330507882e-11, -3.11087613884267e-13, -1.20771932177756e-12
#>
#> 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
#>
#> 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
#>
#> 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
#>
#> Fit attempt generated errors
#>
#> 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
#>
#> Fit attempt generated errors
#>
#> 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
#> Not all eigenvalues of the Hessian are positive: 29525716.4060167, 28656978.9290051,
23524044.9099163, 112732.559968342, 97113.2650332094, 92650.4999114446, 21754.0335543602,
18545.8956496814, 17400.1610282639, 773.899571436891, 706.54920121972, 630.650319621731,
183.985170483284, 171.646416775874, 152.33599555364, 42.2560805141811, 38.7695543647486,
34.1590871868351, 1.73621298786679e-12, 6.16293018761718e-13, -1.22363125711286e-12
#>
#> 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
#>
#> Fit attempt generated errors
#>
#> 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
#>
#> Fit attempt generated errors
#>
#> 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
#> Not all eigenvalues of the Hessian are positive: 29525705.4760599, 28656938.6591058,
23524042.2400572, 112732.479572344, 97113.1925605394, 92650.4127416505, 21753.9933000898,
18545.8986443051, 17400.1102224537, 773.918441116597, 706.542310992686, 630.593109116751,
183.959784285, 171.625348122805, 152.232279086755, 42.2389099099673, 38.7921435859255,
34.0964248526076, 1.45158678602531e-11, 1.52765654110539e-12, -9.71358881531671e-13
#>
#> 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 worse than current best: -2729.43540230394 vs -2729.43541395448
#>
#> Beginning fit attempt 390 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#> Fit attempt worse than current best: -1665.2198586062 vs -2729.43541395448
#>
#> Beginning fit attempt 391 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#> Fit attempt generated errors
#>
#> Beginning fit attempt 392 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#> Fit attempt generated errors
#>
#> Beginning fit attempt 393 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters

```

```

#>
#> Fit attempt generated errors
#>
#> Beginning fit attempt 394 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#> Solution found

#>
#> Solution found! Final fit=-2729.4354 (started at 84.166179) (395 attempt(s):
20 valid, 375 errors)
#> Start values from best fit:
#> -0.205069775433371,0.881043488689622,-0.376750860365674,-0.147029204266129,-0.542917211804784,0.0...

#>
#> Means of the estimated paramaters per individual.
#>      phi_11      phi_21      phi_31      phi_12      phi_22
#> -3.696554e-01  7.545084e-01 -4.056525e-01 -4.684269e-02 -3.662350e-01
#>      phi_32      phi_13      phi_23      phi_33      iota_1
#>  8.612710e-01  3.884765e-02 -7.476256e-02 -8.654203e-01  5.121519e-01
#>      iota_2      iota_3      sigma_11      sigma_21      sigma_22
#> -7.194968e-02 -2.840696e-01  9.712858e-02  9.342961e-04  1.021726e-01
#>      sigma_31      sigma_32      sigma_33      theta_11      theta_22
#> -3.582113e-03 -2.662046e-03  1.005236e-01  2.225074e-308  2.225074e-308
#>      theta_33
#>  2.225074e-308
#>
#> Estimated paramaters per individual.
#>      phi_11      phi_21      phi_31      phi_12      phi_22      phi_32
#> [1,] -0.5342411  0.6279732 -0.4345542  0.05334383 -0.1895528  0.8656378
#> [2,] -0.2050698  0.8810435 -0.3767509 -0.14702920 -0.5429172  0.8569042
#>      phi_13      phi_23      phi_33      iota_1      iota_2      iota_3
#> [1,] -0.04057727 -0.24885276 -0.7448655  0.7650198 -0.3688504 -0.52795840
#> [2,]  0.11827257  0.09932765 -0.9859751  0.2592840  0.2249510 -0.04018073
#>      sigma_11      sigma_21      sigma_22      sigma_31      sigma_32      sigma_33
#> [1,] 0.10016900  0.004029883  0.10757828 -0.0005086328 -0.002368586  0.09337779
#> [2,] 0.09408817 -0.002161291  0.09676699 -0.0066555933 -0.002955506  0.10766941
#>      theta_11      theta_22      theta_33
#> [1,] 2.225074e-308 2.225074e-308 2.225074e-308
#> [2,] 2.225074e-308 2.225074e-308 2.225074e-308

#> Running CTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 21 parameters
#>
#> Lowest minimum so far: -2708.30348505956

```

```

#> OpenMx status code 6 not in list of acceptable status codes, (0,0)
#> Not all eigenvalues of the Hessian are positive: 30711126.8851965, 24833319.8568181,
20406344.7868806, 108317.680397036, 97929.3515002133, 90881.9846080244, 17753.0781162471,
17430.2744625529, 16333.5758201139, 584.634201444921, 551.840250882418, 493.784112297445,
140.930563941352, 134.1120548931, 121.421343463062, 47.9710252198106, 42.976511506538,
39.7708730880383, 4.97905568039173e-13, -6.13564452823079e-13, -1.7608870381038e-11
#>
#> Beginning fit attempt 1 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#> Lowest minimum so far: -2708.30351491663
#> Not all eigenvalues of the Hessian are positive: 30721357.9553738, 24835362.1752378,
20404761.1457134, 108359.445134379, 97945.2505639849, 90866.8017647772, 17750.9586019978,
17431.8757407029, 16341.3505315207, 584.71054031158, 551.841679172172, 493.798590785682,
140.966605291602, 134.063851077155, 121.342388637216, 47.9793098685843, 42.8748587691378,
39.7062284672248, 1.57398931322632e-12, -2.65993989243475e-13, -3.48865038783152e-11
#>
#> Beginning fit attempt 2 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> Not all eigenvalues of the Hessian are positive: 30721357.9553738, 24835362.1752378,
20404761.1457134, 108359.445134379, 97945.2505639849, 90866.8017647772, 17750.9586019978,
17431.8757407029, 16341.3505315207, 584.71054031158, 551.841679172172, 493.798590785682,
140.966605291602, 134.063851077155, 121.342388637216, 47.9793098685843, 42.8748587691378,
39.7062284672248, 1.57398931322632e-12, -2.65993989243475e-13, -3.48865038783152e-11
#>
#> 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
#>
#> Lowest minimum so far:  -2708.30352549524

```

```

#> Not all eigenvalues of the Hessian are positive: 30715667.191288, 24836599.6291677,
20405845.5784138, 108352.00819632, 97937.6664531941, 90869.6829620515, 17750.8381973295,
17431.3586904746, 16341.2305984671, 584.643868694979, 551.944095449617, 493.825810102635,
141.084862887986, 134.220971158541, 121.507306014256, 48.132526360189, 43.0814522610625,
39.8636461817684, 6.93949669826248e-12, 9.14135114475588e-13, -1.82044161120932e-13
#>
#> Beginning fit attempt 25 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> Not all eigenvalues of the Hessian are positive: 30715667.191288, 24836599.6291677,
20405845.5784138, 108352.00819632, 97937.6664531941, 90869.6829620515, 17750.8381973295,
17431.3586904746, 16341.2305984671, 584.643868694979, 551.944095449617, 493.825810102635,
141.084862887986, 134.220971158541, 121.507306014256, 48.132526360189, 43.0814522610625,
39.8636461817684, 6.93949669826248e-12, 9.14135114475588e-13, -1.82044161120932e-13
#>
#> 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
#>
#> Lowest minimum so far: -2708.3035254954
#> Not all eigenvalues of the Hessian are positive: 30715706.5783755, 24836587.2961416,
20405890.2600522, 108351.980317446, 97937.7288963951, 90869.7438870804, 17750.8807601784,
17431.3217688602, 16341.2312318788, 584.685274590789, 551.916877289642, 493.77033996539,
140.988050805828, 134.266729688619, 121.521989626089, 48.0745648308562, 43.0810997230008,
39.8525229674501, -1.68781437375433e-13, -1.76403993428985e-12, -1.57161040936746e-11
#>
#> Beginning fit attempt 45 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> Not all eigenvalues of the Hessian are positive: 30715706.5783755, 24836587.2961416,
20405890.2600522, 108351.980317446, 97937.7288963951, 90869.7438870804, 17750.8807601784,
17431.3217688602, 16341.2312318788, 584.685274590789, 551.916877289642, 493.77033996539,
140.988050805828, 134.266729688619, 121.521989626089, 48.0745648308562, 43.0810997230008,
39.8525229674501, -1.68781437375433e-13, -1.76403993428985e-12, -1.57161040936746e-11
#>
#> 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: -2708.30347402705 vs -2708.3035254954
#>
#> 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
#> Not all eigenvalues of the Hessian are positive: 30715742.4751229, 24836565.1420119,
20405863.4939799, 108351.904918147, 97937.6526195638, 90869.5011041512, 17750.7304735282,
17431.189950401, 16341.2114533842, 584.629334335478, 551.86661355262, 493.785836810442,
140.976172401718, 134.112837590989, 121.383079217676, 47.9799823151257, 42.9482151723012,
39.7132897020787, 3.21753493847831e-12, -1.16378503496009e-13, -3.44399421001508e-12
#>
#> 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
#> Not all eigenvalues of the Hessian are positive: 30715708.1796986, 24836531.8456064,
20405893.4494477, 108351.9220777, 97937.8615340801, 90869.5438563093, 17750.8584573055,
17431.287183127, 16341.1973112409, 584.641584527413, 551.906614175781, 493.778834055292,
140.995761758732, 134.18262931925, 121.489209209429, 48.0696690700706, 42.9820982426356,
39.819589495767, 5.41409790480741e-13, -5.28247168280527e-13, -4.4142141115853e-12
#>
#> 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 worse than current best:  -2708.30346906861 vs -2708.3035254954
#>
#> 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
#> Not all eigenvalues of the Hessian are positive: 30715930.7389572, 24836200.1283017,
20404160.5758157, 108351.425839909, 97936.377759788, 90866.528032213, 17749.7511148188,
17431.4719199881, 16341.5051459988, 584.676007711428, 551.838913507929, 493.769489805518,
140.96361459046, 134.087937534212, 121.39107760799, 47.9801805162382, 42.9300860000085,
39.7452369702536, 9.7996573155134e-13, 4.97056696980755e-13, -9.46666952737492e-12
#>
#> 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 worse than current best: -2708.30351354514 vs -2708.3035254954
#>
#> 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
#>
#> Solution found

```

```

#>
#> Solution found! Final fit=-2708.3035 (started at -34.74447) (164 attempt(s):

```

```

14 valid, 150 errors)
#> Start values from best fit:
#> -0.534241822589195, 0.627972816649917, -0.434553071805798, 0.0533429356171333, -0.189553362761884, 0.0
#> Running CTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 21 parameters
#>
#> Lowest minimum so far: -2729.43541395408
#> Not all eigenvalues of the Hessian are positive: 29525731.3709691, 28656941.6665995,
23524038.75803, 112732.512818651, 97113.1583594141, 92650.4872329504, 21753.9538374874,
18545.880465442, 17400.0853968873, 774.006941073601, 706.513901290181, 630.58430603717,
183.8838246711425, 171.60993239987, 152.264194860907, 42.1713862754047, 38.7374849805555,
34.0012644923285, 3.81305215383927e-13, -1.54123639097498e-12, -8.82608087358713e-12
#>
#> Beginning fit attempt 1 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#> Lowest minimum so far: -2729.43541395419
#> Not all eigenvalues of the Hessian are positive: 29525732.5953028, 28656946.6567347,
23524039.139461, 112732.574479344, 97113.2003436495, 92650.5249647278, 21754.0660048195,
18545.9478062877, 17400.1700035568, 773.905472699145, 706.534129741682, 630.67302425858,
183.986575709132, 171.663549135792, 152.256957330752, 42.2782176209568, 38.7547378437543,
34.1090180804838, 8.07645069929144e-12, -2.06783438192577e-12, -3.27169464786044e-12
#>
#> Beginning fit attempt 2 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> Not all eigenvalues of the Hessian are positive: 29525732.5953028, 28656946.6567347,
23524039.139461, 112732.574479344, 97113.2003436495, 92650.5249647278, 21754.0660048195,
18545.9478062877, 17400.1700035568, 773.905472699145, 706.534129741682, 630.67302425858,
183.986575709132, 171.663549135792, 152.256957330752, 42.2782176209568, 38.7547378437543,
34.1090180804838, 8.07645069929144e-12, -2.06783438192577e-12, -3.27169464786044e-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
#> Not all eigenvalues of the Hessian are positive: 29525815.4530169, 28657114.9312023,
23524084.0668984, 112732.84063296, 97113.4980651257, 92650.4500957583, 21754.0632349387,
18545.8688192092, 17400.0359024225, 774.023024999039, 706.490362758218, 630.567852372695,
183.916860191414, 171.585170682657, 152.192417123736, 42.1741828410762, 38.7412360260113,
34.0089005383509, 1.08036212846659e-12, -6.98892007237873e-13, -1.33781655611747e-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
#> Not all eigenvalues of the Hessian are positive: 29525746.2244578, 28656975.4609031,
23523970.7108847, 112732.613909772, 97113.0319276359, 92650.3956846494, 21754.0153363884,
18545.8867743122, 17400.0479821015, 773.972069641975, 706.50334428298, 630.57727157712,

```

```

183.988903287142, 171.64669699276, 152.227710609705, 42.1417966036958, 38.769979767689,
34.0550509044495, -1.42418779789534e-12, -1.96378542127835e-12, -7.6281037630594e-12
#>
#> 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 worse than current best: -1948.36799084704 vs -2729.43541395419
#>
#> 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
#>
#> 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
#>
#> Lowest minimum so far: -2729.43541395435
#> Not all eigenvalues of the Hessian are positive: 29525720.2964964, 28656960.184968,
23524054.0714894, 112732.483560639, 97113.2708329972, 92650.4486310931, 21754.0120180824,
18545.9057993756, 17400.1109734236, 773.949469642663, 706.493220161922, 630.631420538492,
183.937813459469, 171.650478009058, 152.253412150545, 42.1905441599013, 38.7230150092248,
34.0854643928839, 2.78339196586754e-12, 1.79494955467733e-12, -1.54898700152161e-12
#>
#> Beginning fit attempt 106 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> Not all eigenvalues of the Hessian are positive: 29525720.2964964, 28656960.184968,
23524054.0714894, 112732.483560639, 97113.2708329972, 92650.4486310931, 21754.0120180824,
18545.9057993756, 17400.1109734236, 773.949469642663, 706.493220161922, 630.631420538492,
183.937813459469, 171.650478009058, 152.253412150545, 42.1905441599013, 38.7230150092248,
34.0854643928839, 2.78339196586754e-12, 1.79494955467733e-12, -1.54898700152161e-12
#>
#> 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
#> Not all eigenvalues of the Hessian are positive: 29525738.4810269, 28656915.3289627,
23524036.5558368, 112732.484872587, 97113.1279017733, 92650.3779985745, 21753.9533447841,
18545.8604614301, 17400.1274061224, 773.935507937316, 706.523077312327, 630.593804031564,
184.015577718278, 171.640561413684, 152.253739619356, 42.1850421464649, 38.7403583912916,
34.0035061014185, 2.56183067067123e-12, 1.65054250869312e-12, -1.72969258019581e-12
#>
#> 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
#>
#> Lowest minimum so far: -2729.43541395441
#> Not all eigenvalues of the Hessian are positive: 29525695.7955336, 28656959.2550029,
23524033.620095, 112732.487080554, 97113.1868814886, 92650.4587172648, 21754.0060064228,
18545.9036479704, 17400.1446063109, 773.898429213042, 706.577476963039, 630.614484598913,
183.981366853924, 171.648280916678, 152.239301213035, 42.2836825456985, 38.8003042662418,
34.0699598445263, 2.50640595053751e-12, -3.41883361447482e-13, -4.04390831010019e-12
#>
#> Beginning fit attempt 135 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> Not all eigenvalues of the Hessian are positive: 29525695.7955336, 28656959.2550029,
23524033.620095, 112732.487080554, 97113.1868814886, 92650.4587172648, 21754.0060064228,
18545.9036479704, 17400.1446063109, 773.898429213042, 706.577476963039, 630.614484598913,
183.981366853924, 171.648280916678, 152.239301213035, 42.2836825456985, 38.8003042662418,
34.0699598445263, 2.50640595053751e-12, -3.41883361447482e-13, -4.04390831010019e-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
#> Not all eigenvalues of the Hessian are positive: 29525090.192563, 28651203.2937655,
23519598.0441529, 112717.39395021, 97099.1432384503, 92643.8553477096, 21750.386885909,
18545.6366573837, 17397.5311929497, 773.816176927432, 706.572746839177, 630.64741103574,
183.976069794214, 171.657000614961, 152.30711635252, 42.2180188944058, 38.8117169762394,
34.1493330430918, 5.65115169980419e-12, -5.64343154101928e-14, -1.45025484791982e-12
#>
#> 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
#>
#> Lowest minimum so far: -2729.43541395443
#> Not all eigenvalues of the Hessian are positive: 29525760.4527309, 28656980.9544141,
23524061.4404177, 112732.595584506, 97113.2417214726, 92650.6407093269, 21753.9940000197,
18545.946873752, 17400.1437286018, 773.942579435516, 706.531312343728, 630.60314815552,
183.922335989971, 171.59545253971, 152.199605203047, 42.2472923812034, 38.7670587617165,
34.0630402531778, 8.45189989190632e-13, -5.10607702522697e-14, -5.04139851035809e-12
#>
#> Beginning fit attempt 160 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#> Lowest minimum so far: -2729.43541395446
#> Not all eigenvalues of the Hessian are positive: 29525743.6076001, 28656976.0909133,
23524044.3991933, 112732.606902489, 97113.3120186357, 92650.5884127951, 21754.0379669504,
18545.9732830048, 17400.1954966772, 773.857853568811, 706.575178341751, 630.656567599593,

```

```

184.018114842548, 171.713776837431, 152.373404537032, 42.2577684767168, 38.8277107950672,
34.1751309468267, 4.22982819664272e-12, 1.60783906403037e-12, -1.15297037081324e-12
#>
#> Beginning fit attempt 161 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> Not all eigenvalues of the Hessian are positive: 29525743.6076001, 28656976.0909133,
23524044.3991933, 112732.606902489, 97113.3120186357, 92650.5884127951, 21754.0379669504,
18545.9732830048, 17400.1954966772, 773.857853568811, 706.575178341751, 630.656567599593,
184.018114842548, 171.713776837431, 152.373404537032, 42.2577684767168, 38.8277107950672,
34.1751309468267, 4.22982819664272e-12, 1.60783906403037e-12, -1.15297037081324e-12
#>
#> 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 worse than current best:  -2727.92025499819 vs -2729.43541395446
#>
#> 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
#> Not all eigenvalues of the Hessian are positive: 29525737.9683715, 28656955.2630874,
23524042.7243122, 112732.534829008, 97113.2213205609, 92650.4852014691, 21754.0046001059,
18545.845581957, 17400.1486012527, 773.892719590035, 706.549607310094, 630.652817191182,
183.953650037574, 171.602517144116, 152.248296503098, 42.2633236147955, 38.7746725680829,
34.1235030270254, 1.93153717384665e-12, -2.05460260980932e-12, -3.39656372860221e-12
#>
#> 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
#>
#> 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
#>
#> 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: 29525731.4911064, 28656851.3023151,
23524067.2757948, 112732.393072345, 97113.0655332277, 92650.5217831766, 21753.9029862055,
18545.9167065681, 17400.1419482658, 773.937473752592, 706.512126005901, 630.625477381047,
183.936403896239, 171.617036042807, 152.233151818187, 42.1846687928276, 38.8080057383124,
34.0442451309555, 4.89955092672706e-12, -1.23003570822448e-13, -4.13173019623931e-12
#>
#> 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
#> Not all eigenvalues of the Hessian are positive: 29525317.4164932, 28656946.1022297,
23523553.5162856, 112732.00549382, 97111.5744067485, 92649.6534549436, 21753.9705902744,
18545.6665522147, 17399.8159797302, 773.99660705981, 706.458221946428, 630.54883170385,
183.897040368395, 171.679175879407, 152.198703311025, 42.1628178132807, 38.7905227787212,
34.0081143151841, 6.44737628303558e-12, -4.60972391679395e-13, -7.428206816053e-13
#>
#> 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
#>
#> Lowest minimum so far: -2729.4354139545
#>
#> Solution found

```

```

#>
#> Retry limit reached; Best fit=-2708.3035 (started at 59.80475) (1001 attempt(s):
64 valid, 937 errors)
#> Start values from best fit:
#> -0.534241483381922,0.627973995733431,-0.43455417290579,0.0533435381911255,-0.189553515477411,0.8
#> Running CTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 21 parameters
#>
#> Lowest minimum so far: -2729.43541395444
#> Not all eigenvalues of the Hessian are positive: 29525705.9055929, 28656950.1464639,
23524019.7246255, 112732.481235427, 97113.196590124, 92650.4448569707, 21754.0295101035,
18545.9100880615, 17400.1035492018, 773.879972326702, 706.580507799201, 630.66509425964,
184.011610445327, 171.687958187791, 152.28119295692, 42.2538812076208, 38.8441241773105,
34.1236100199674, 9.93948942662182e-13, 6.32720234555393e-13, -5.67738984515497e-13
#>
#> Beginning fit attempt 1 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#> Lowest minimum so far: -2729.43541395448
#> Not all eigenvalues of the Hessian are positive: 29525739.4036879, 28656971.1045355,
23524038.5888871, 112732.579764377, 97113.2565793016, 92650.5162867427, 21754.0106222081,
18545.8878406483, 17400.1252515249, 773.951878435953, 706.49719744385, 630.610668165023,
183.908394629475, 171.593994560571, 152.236457680364, 42.2582365514802, 38.7628126694932,
34.0740821750434, 5.93743562836628e-13, -1.84067099774388e-13, -2.03015853623666e-12
#>
#> Beginning fit attempt 2 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> Not all eigenvalues of the Hessian are positive: 29525739.4036879, 28656971.1045355,
23524038.5888871, 112732.579764377, 97113.2565793016, 92650.5162867427, 21754.0106222081,
18545.8878406483, 17400.1252515249, 773.951878435953, 706.49719744385, 630.610668165023,
183.908394629475, 171.593994560571, 152.236457680364, 42.2582365514802, 38.7628126694932,
34.0740821750434, 5.93743562836628e-13, -1.84067099774388e-13, -2.03015853623666e-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
#>
#> Lowest minimum so far: -2729.4354139545

```

```

#> Not all eigenvalues of the Hessian are positive: 29525744.5458946, 28656978.0185292,
23524041.5195844, 112732.564616854, 97113.163085741, 92650.4826012616, 21753.9590671783,
18545.8924833448, 17400.092474108, 774.077684314404, 706.450931342132, 630.573254309554,
183.894500355117, 171.58034940377, 152.152293835352, 42.1805737091092, 38.6603178190615,
33.9839037974393, 1.96039679157554e-12, 5.20249830975356e-14, -3.38154944158797e-12
#>
#> Beginning fit attempt 41 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#> Not all eigenvalues of the Hessian are positive: 29525744.5458946, 28656978.0185292,
23524041.5195844, 112732.564616854, 97113.163085741, 92650.4826012616, 21753.9590671783,
18545.8924833448, 17400.092474108, 774.077684314404, 706.450931342132, 630.573254309554,
183.894500355117, 171.58034940377, 152.152293835352, 42.1805737091092, 38.6603178190615,
33.9839037974393, 1.96039679157554e-12, 5.20249830975356e-14, -3.38154944158797e-12
#>
#> 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
#> Not all eigenvalues of the Hessian are positive: 29525749.8122661, 28656983.4923593,
23524044.2429819, 112732.630179935, 97113.26102751, 92650.5399250956, 21753.9956346936,
18545.9590610522, 17400.1674578517, 773.821066027654, 706.604281138046, 630.667734870351,
183.986893856158, 171.734968227244, 152.336387123073, 42.2890614746466, 38.8394482198301,
34.1246890808648, -1.41028616428182e-13, -2.14475298285911e-12, -3.13943428086545e-12
#>
#> 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
#> Not all eigenvalues of the Hessian are positive: 29525776.0164376, 28657058.3078795,
23524128.7214827, 112732.900625365, 97113.5765832821, 92650.6769821722, 21754.0576123085,
18545.9294557944, 17400.1808267526, 774.087796548276, 706.427136765393, 630.522550517672,
183.896700973949, 171.61662112088, 152.162446608387, 42.1142686220706, 38.6810711642239,
33.9521328703124, 1.79589140584898e-12, -2.83693079814331e-13, -4.64547004253904e-12
#>
#> 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
#> Not all eigenvalues of the Hessian are positive: 29525732.3837197, 28656988.805837,
23524060.2428804, 112732.619789305, 97113.3323346603, 92650.5341230536, 21754.009706749,
18545.8972502482, 17400.1536447582, 773.887020147843, 706.56011752514, 630.649587502187,
183.963182783979, 171.647002651923, 152.269369049972, 42.2631716359754, 38.7752482874184,
34.1174505694409, 9.56805647591781e-13, -2.66989312346963e-12, -3.95460117930952e-12
#>
#> Beginning fit attempt 78 of at maximum 1000 extra tries
#> Running CTVAR with 21 parameters
#>
#> Solution found

```

```

#>
#> Solution found! Final fit=-2729.4354 (started at 84.166179) (79 attempt(s):
9 valid, 70 errors)
#> Start values from best fit:
#> -0.20491867748907, 0.881081596809365, -0.376661558518932, -0.147206168085116, -0.542939332784104, 0.8
#> test-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: -2708.30352549539
#>
#> Solution found

```

```

#>
#> Solution found! Final fit=-2708.3035 (started at -2583.5637) (1 attempt(s):
1 valid, 0 errors)
#> Start values from best fit:

```

```
#> -0.534241206420914,0.62797339469317,-0.434553823990626,0.0533435092912926,-0.189553489184932,0.8
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#> Lowest minimum so far: -2729.43541395449
#>
#> Solution found
```

```
#>
#> Solution found! Final fit=-2729.4354 (started at -2584.9163) (1 attempt(s):
1 valid, 0 errors)
#> Start values from best fit:
#> -0.205071078209191,0.88104367367791,-0.376750228145059,-0.147028539743142,-0.542917489941515,0.8
#>
#> Means of the estimated paramaters per individual.
#>      phi_11      phi_21      phi_31      phi_12      phi_22
#> -0.3696561423  0.7545085342 -0.4056520261 -0.0468425152 -0.3662354896
#>      phi_32      phi_13      phi_23      phi_33      sigma_11
#>  0.8612711545  0.0388481598 -0.0747622926 -0.8654204220  0.0971285185
#>      sigma_21      sigma_22      sigma_31      sigma_32      sigma_33
#>  0.0009342611  0.1021725684 -0.0035821148 -0.0026620320  0.1005236058
#>
#> Estimated paramaters per individual.
#>      phi_11      phi_21      phi_31      phi_12      phi_22      phi_32
#> [1,] -0.5342412  0.6279734 -0.4345538  0.05334351 -0.1895535  0.8656379
#> [2,] -0.2050711  0.8810437 -0.3767502 -0.14702854 -0.5429175  0.8569044
#>      phi_13      phi_23      phi_33      sigma_11      sigma_21      sigma_22
#> [1,] -0.04057728 -0.24885244 -0.7448651  0.10016898  0.004029849  0.10757830
#> [2,]  0.11827360  0.09932785 -0.9859757  0.09408806 -0.002161327  0.09676684
#>      sigma_31      sigma_32      sigma_33
#> [1,] -0.0005085985 -0.002368596  0.09337775
#> [2,] -0.0066556310 -0.002955468  0.10766946
#> Test passed

#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#> Lowest minimum so far: -2708.30352549542
#>
#> Solution found
```

```

#>
#> Solution found! Final fit=-2708.3035 (started at -2692.6342) (1 attempt(s):
1 valid, 0 errors)
#> Start values from best fit:
#> -0.534241439090794,0.627973836182731,-0.434554104324778,0.0533436206892379,-0.189553553245162,0.
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#> Lowest minimum so far: -2729.43541395448
#>
#> Solution found

```

```

#>
#> Solution found! Final fit=-2729.4354 (started at -2715.8485) (1 attempt(s):
1 valid, 0 errors)
#> Start values from best fit:
#> -0.205071165693674,0.881043783235328,-0.376750185855582,-0.147028678756531,-0.542917492518065,0.
#>
#> Means of the estimated paramaters per individual.
#>      phi_11      phi_21      phi_31      phi_12      phi_22
#> -0.3696563024  0.7545088097 -0.4056521451 -0.0468425290 -0.3662355229
#>      phi_32      phi_13      phi_23      phi_33      sigma_11
#>  0.8612712273  0.0388481828 -0.0747623322 -0.8654204659  0.0971285260
#>      sigma_21      sigma_22      sigma_31      sigma_32      sigma_33
#>  0.0009342544  0.1021725758 -0.0035821156 -0.0026620324  0.1005236009
#>
#> Estimated paramaters per individual.
#>      phi_11      phi_21      phi_31      phi_12      phi_22      phi_32
#> [1,] -0.5342414  0.6279738 -0.4345541  0.05334362 -0.1895536  0.8656381
#> [2,] -0.2050712  0.8810438 -0.3767502 -0.14702868 -0.5429175  0.8569043
#>      phi_13      phi_23      phi_33      sigma_11      sigma_21      sigma_22
#> [1,] -0.04057732 -0.24885250 -0.7448653  0.10016898  0.004029840  0.10757833
#> [2,]  0.11827368  0.09932784 -0.9859756  0.09408807 -0.002161331  0.09676682
#>      sigma_31      sigma_32      sigma_33
#> [1,] -0.0005085965 -0.002368602  0.09337775
#> [2,] -0.0066556348 -0.002955463  0.10766945
#> Test passed

#> test-fitCTVARm-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: -2707.31197420096
#>
#> Solution found

#>
#> Solution found! Final fit=-2707.312 (started at 59.80475) (1 attempt(s): 1
valid, 0 errors)
#> Start values from best fit:
#> -0.545403553270473,0.655780191333924,-0.431937927519135,0.068469691036237,-0.195215180793901,0.8
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#> Lowest minimum so far: -2726.62588111855
#>
#> Solution found

#>
#> Solution found! Final fit=-2726.6259 (started at 84.166179) (1 attempt(s): 1
valid, 0 errors)
#> Start values from best fit:
#> -0.213899106730518,0.861185478973193,-0.405561987990989,-0.131907351800459,-0.523808434338325,0.8

#>
#> Means of the estimated paramaters per individual.
#>
#>      phi_11      phi_21      phi_31      phi_12      phi_22
#> -3.796513e-01  7.584828e-01 -4.187500e-01 -3.171883e-02 -3.595118e-01
#>      phi_32      phi_13      phi_23      phi_33      sigma_11
#>  8.622209e-01  2.195191e-02 -8.616802e-02 -8.662899e-01  9.721588e-02
#>      sigma_22      sigma_33      theta_11      theta_22      theta_33
#>  1.021101e-01  1.005314e-01  2.225074e-308  1.424465e-12  2.395002e-13
#>
#> Estimated paramaters per individual.
#>
#>      phi_11      phi_21      phi_31      phi_12      phi_22      phi_32
#> [1,] -0.5454036  0.6557802 -0.4319379  0.06846969 -0.1952152  0.8591466
#> [2,] -0.2138991  0.8611855 -0.4055620 -0.13190735 -0.5238084  0.8652951
#>      phi_13      phi_23      phi_33      sigma_11      sigma_22      sigma_33
#> [1,] -0.05179217 -0.25075666 -0.7402836  0.10027194  0.10763471  0.09333229
#> [2,]  0.09569600  0.07842062 -0.9922962  0.09415982  0.09658557  0.10773048
#>      theta_11      theta_22      theta_33
#> [1,] 2.225074e-308 2.848888e-12 4.787923e-13
#> [2,] 2.225074e-308 4.055903e-17 2.080635e-16
#> Test passed

```

```
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#> Lowest minimum so far: -2707.31197426421
#>
#> Solution found
```

```
#>
#> Solution found! Final fit=-2707.312 (started at -34.74447) (1 attempt(s): 1
valid, 0 errors)
#> Start values from best fit:
#> -0.545411047455776,0.655791769968899,-0.431918087958712,0.0684714732476686,-0.195223148449835,0.8
#> Running CTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 15 parameters
#>
#> Lowest minimum so far: -2726.62588111983
#>
#> Solution found
```

```
#>
#> Solution found! Final fit=-2726.6259 (started at -26.856599) (1 attempt(s):
1 valid, 0 errors)
#> Start values from best fit:
#> -0.213900157034642,0.861186935515007,-0.405561579767654,-0.131907487288541,-0.523808807245147,0.8
#>
#> Means of the estimated paramaters per individual.
#>      phi_11      phi_21      phi_31      phi_12      phi_22
#> -3.796556e-01  7.584894e-01 -4.187398e-01 -3.171801e-02 -3.595160e-01
#>      phi_32      phi_13      phi_23      phi_33      sigma_11
#>  8.622161e-01  2.195551e-02 -8.616503e-02 -8.662912e-01  9.721582e-02
#>      sigma_22      sigma_33      theta_11      theta_22      theta_33
#>  1.021101e-01  1.005314e-01  1.583135e-17  1.049599e-17  4.394859e-18
#>
#> Estimated paramaters per individual.
#>      phi_11      phi_21      phi_31      phi_12      phi_22      phi_32
#> [1,] -0.5454110  0.6557918 -0.4319181  0.06847147 -0.1952231  0.8591365
#> [2,] -0.2139002  0.8611869 -0.4055616 -0.13190749 -0.5238088  0.8652957
#>      phi_13      phi_23      phi_33      sigma_11      sigma_22      sigma_33
#> [1,] -0.05178742 -0.25075041 -0.7402854  0.10027177  0.1076347  0.09333225
#> [2,]  0.09569844  0.07842035 -0.9922970  0.09415987  0.0965856  0.10773052
#>      theta_11      theta_22      theta_33
```

```
#> [1,] 8.404687e-20 2.225074e-308 2.225074e-308
#> [2,] 3.157865e-17 2.099199e-17 8.789718e-18
#> Test passed
```

```
#> test-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: -2707.31197426421
#>
#> Solution found
```

```
#>
#> Solution found! Final fit=-2707.312 (started at -2583.5637) (1 attempt(s): 1
valid, 0 errors)
#> Start values from best fit:
#> -0.545410808015616,0.655791704057053,-0.4319181053049,0.0684713570989829,-0.1952231790709,0.8591364
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#> Lowest minimum so far: -2726.62588111983
#>
#> Solution found
```

```
#>
#> Solution found! Final fit=-2726.6259 (started at -2584.9163) (1 attempt(s):
1 valid, 0 errors)
#> Start values from best fit:
#> -0.213900151770005,0.861186849501166,-0.405561461480421,-0.131907517647472,-0.523808720935904,0.8652957
#>
#> Means of the estimated paramaters per individual.
#>      phi_11      phi_21      phi_31      phi_12      phi_22      phi_32
#> -0.37965548  0.75848928 -0.41873978 -0.03171808 -0.35951595  0.86221607
#>      phi_13      phi_23      phi_33      sigma_11      sigma_22      sigma_33
#>  0.02195558 -0.08616503 -0.86629112  0.09721581  0.10211013  0.10053139
#>
#> Estimated paramaters per individual.
#>      phi_11      phi_21      phi_31      phi_12      phi_22      phi_32
#> [1,] -0.5454108 0.6557917 -0.4319181 0.06847136 -0.1952232 0.8591364
#> [2,] -0.2139002 0.8611868 -0.4055615 -0.13190752 -0.5238087 0.8652957
#>      phi_13      phi_23      phi_33      sigma_11      sigma_22      sigma_33
```

```
#> [1,] -0.05178730 -0.25075038 -0.7402852 0.10027176 0.10763468 0.09333226
#> [2,] 0.09569846 0.07842031 -0.9922970 0.09415987 0.09658558 0.10773053
#> Test passed
```

```
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#> Lowest minimum so far: -2707.31197426421
#>
#> Solution found
```

```
#>
#> Solution found! Final fit=-2707.312 (started at -2692.6342) (1 attempt(s): 1
valid, 0 errors)
#> Start values from best fit:
#> -0.545410822968464,0.655791720204795,-0.431918099282865,0.0684713331800128,-0.195223149243982,0.
#> Running CTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running CTVAR with 12 parameters
#>
#> Lowest minimum so far: -2726.62588111983
#>
#> Solution found
```

```
#>
#> Solution found! Final fit=-2726.6259 (started at -2715.8485) (1 attempt(s):
1 valid, 0 errors)
#> Start values from best fit:
#> -0.213900127082883,0.861186936784289,-0.405561515713572,-0.131907503993629,-0.523808771434401,0.
#>
#> Means of the estimated paramaters per individual.
#>      phi_11      phi_21      phi_31      phi_12      phi_22      phi_32
#> -0.37965548 0.75848933 -0.41873981 -0.03171809 -0.35951596 0.86221611
#>      phi_13      phi_23      phi_33      sigma_11      sigma_22      sigma_33
#> 0.02195557 -0.08616504 -0.86629114 0.09721581 0.10211014 0.10053139
#>
#> Estimated paramaters per individual.
#>      phi_11      phi_21      phi_31      phi_12      phi_22      phi_32
#> [1,] -0.5454108 0.6557917 -0.4319181 0.06847133 -0.1952231 0.8591364
#> [2,] -0.2139001 0.8611869 -0.4055615 -0.13190750 -0.5238088 0.8652958
#>      phi_13      phi_23      phi_33      sigma_11      sigma_22      sigma_33
#> [1,] -0.05178729 -0.25075041 -0.7402852 0.10027176 0.10763469 0.09333226
```

```
#> [2,] 0.09569843 0.07842032 -0.9922971 0.09415987 0.09658559 0.10773052
#> Test passed

#> test-fitCTVARmx-fit-ct-var-mx-theta-null
#> Error in mxFitFunctionMultigroup(paste0("CTVAR", "_", ids)): could not find function
"mxFitFunctionMultigroup"
```

## 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/>