fitDTVARMx: External Tests

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Tests

```
#> test-external-fitDTVARMx-fit-dt-var-id-mx-psi-diag
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   759.332723034266
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=759.33272 (started at 2818.8767)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716461594268781,0.461130103434526,-0.111058104052503,0.00301990065158215,0.627962466371071,0.42
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   811.221283431467
#>
#> Solution found
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```
#>
#>  Solution found!   Final fit=811.22128 (started at 2588.505)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.644376822379958,0.498319862422355,-0.160138757853946,0.0339457523281381,0.60202505558271,0.4385
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
```

```
#>
#>  Lowest minimum so far:   851.056191919888
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=851.05619 (started at 2728.4921)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.650804152587558,0.500936223533729,-0.117869966244044,0.0358584466671872,0.581033255621994,0.45
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   758.939240001087
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=758.93924 (started at 2854.9595)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6942524827475 68,0.508254712117776,-0.105604057104861,0.00403646757951646,0.632271243648902,0.45
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   755.237014820988
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=755.23701 (started at 2812.8936)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.655922071168991,0.485798776878 36,-0.0839744194072475,0.0298173300980825,0.656191959996754,0.38
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   767.863852470668
```

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

```
#>
#>  Solution found!   Final fit=767.86385 (started at 2522.5355)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6661111148917,0.464519076919049,-0.0655319370278874,0.0379815425135491,0.576484188972957,0.401
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   807.608080756468
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=807.60808 (started at 3214.4662)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.7095130550531,0.512499712173206,-0.0692805896211676,0.0311077019364299,0.614389046595127,0.379
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   828.951705065187
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=828.95171 (started at 3126.4497)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.733264788863225,0.473562971107431,-0.173022757515241,-0.0104990839461825,0.625703544856902,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   746.033688503384
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=746.03369 (started at 2638.9239)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.668484301092742,0.51138621629638,-0.0225537318120472,-0.0555161115431583,0.637385379142246,0.38
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   851.374280350207
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=851.37428 (started at 3004.5656)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.718825722836537,0.48235380270807,-0.169307336880467,-0.00202819864122296,0.619552406230925,0.43
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   799.274821858165
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=799.27482 (started at 2962.9231)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.708588261228634,0.475388229135813,-0.0854309590011715,-0.0141769414286767,0.629365493947916,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   840.483916141231
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=840.48392 (started at 3098.1221)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.720735518069381,0.499551991405701,-0.149780544748022,-0.00930202643115042,0.574215681169346,0.
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   718.539233542402
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=718.53923 (started at 2186.5411)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.677880341672318,0.431826450749655,-0.166188298322661,-0.0373797352663127,0.594622543905395,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   779.766644444407
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=779.76664 (started at 2675.0592)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.609971646719175,0.539347774502O1,-0.112605660413882,0.0157158111595143,0.616305811402161,0.424
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   850.752343563444
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=850.75234 (started at 3142.1671)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.691623804012226,0.471544485897595,-0.0100294723327233,0.0250565521854465,0.633323731032243,0.4
#> Running DTVAR with 12 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   872.34306757139
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=872.34307 (started at 2583.8942)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.627986746606938,0.50335892249985,-0.108103630273034,0.0109464645923342,0.592093464791283,0.384
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   764.239047454334
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=764.23905 (started at 2962.0687)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.67105294053085,0.449887649000752,-0.143458815256208,0.0768224346437029,0.627515746666162,0.396
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   957.9243775737505
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=957.92438 (started at 3332.8123)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.739922346378846,0.485927042232824,-0.0717538017632368,-0.0342026956014292,0.6240774938083,0.40
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
```

```
#>
#>  Lowest minimum so far:   633.011904428566
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=633.0119 (started at 2223.8663)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.690213513068111,0.466362670344152,-0.0879599163745913,-0.0170226181885829,0.624374818924666,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   694.317115186718
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=694.31712 (started at 2880.1989)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.674456574145247,0.531884168814988,-0.0838788035112604,0.0242219856483305,0.605791688734476,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   706.595319003195
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=706.59532 (started at 2831.2135)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.696198361443529,0.47033350806689,-0.0677346577381333,0.0443111669122736,0.641500229796633,0.381
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   750.698512473323
```

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

```
#>
#>  Solution found!   Final fit=750.69851 (started at 2617.189)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.671673577610027,0.553223041143065,-0.0309216980368968,0.027945584674691,0.576180619805424,0.38
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   833.816258681054
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=833.81626 (started at 2874.4152)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.64049564483478,0.521837363160335,-0.133809910294518,0.00875136386287813,0.607513730708 68,0.35
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   863.215725480729
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=863.21573 (started at 2735.9084)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.702336925380831,0.526763645809178,-0.10302942237239,-0.0646796395406807,0.566209899448809,0.41
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   782.276989787587
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=782.27699 (started at 2818.3029)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.751079842826758,0.515348162651717,-0.0856261602381017,-0.0423177565833913,0.565376921520485,0.
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   885.400081850406
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=885.40008 (started at 3108.7275)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.711902034855524,0.492753831090941,-0.0766983681358221,0.0284133659575973,0.592131565493811,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   870.776467535204
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=870.77647 (started at 2947.4234)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.717342945794694,0.483864010973883,-0.0377741740801736,-0.00846860357385741,0.59273073403503,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   825.091328764683
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=825.09133 (started at 2726.9105)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.671378784761566,0.495755549187164,-0.106318495635697,0.0223503756046088,0.58423655700464,0.439
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   732.657907507978
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=732.65791 (started at 2991.6161)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.764032648283235,0.471287001814766,-0.082229982090093,-0.00101245837563025,0.622298962927359,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   726.376014908232
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=726.37601 (started at 2487.1488)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.698020505561103,0.540256679924573,-0.130671049333998,0.0219015717434524,0.536368805316912,0.39
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   743.06253438225
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=743.06253 (started at 2694.1576)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.731754835793631,0.460965075767634,-0.1434716820242,-0.0216993813992399,0.6049383953541,0.42084
#> Running DTVAR with 12 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   797.484023499137
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=797.48402 (started at 2668.9238)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6762776947936 17,0.501583771707843,-0.06187973035375,-0.0193575825688431,0.614583065520855,0.40
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   770.977494676037
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=770.97749 (started at 2648.519)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.706895800327194,0.511010577888189,-0.0872678711618278,0.0314694503916333,0.601610168470179,0.38
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   749.349505885161
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=749.34951 (started at 2244.6977)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.653912522999667,0.510586048106383,-0.100988573067708,-0.0413976764995652,0.545606806035989,0.39
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
```

```
#>
#>  Lowest minimum so far:   889.8616765020777
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=889.86168 (started at 2694.2373)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6642893712791 09,0.5102449367562 76,-0.1016766676219 02,-0.0011836799932 8859,0.5695084024377 11,0.
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   725.595924157009
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=725.59592 (started at 2203.3335)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6113883494090 92,0.5245113588901 67,-0.1241845842438 65,0.0219294400932992,0.5420406047368 46,0.395
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   812.090920433365
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=812.09092 (started at 3110.0582)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.7417519129415 88,0.4693205593884 66,-0.0879921988685319,-0.0380914370049528,0.6544367930942 38,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   815.197848341689
```

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

```
#>
#>  Solution found!   Final fit=815.19785 (started at 2666.7364)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6932274607788832,0.409815304298299,-0.0514572211617755,-0.0205940886660018,0.635597773482195,0.
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   820.593168415493
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=820.59317 (started at 2295.3086)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.643304825135551,0.397856735560794,-0.0386468193218034,-0.00783303145434867,0.661822704299331,0
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   752.466226469855
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=752.46623 (started at 2484.7537)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.664098311347438,0.53099071164222,-0.106972800626957,0.0260199511752171,0.584333638614264,0.378
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   766.219955415809
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=766.21996 (started at 2540.8022)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.624786762223102,0.480327062303527,-0.141720219803405,0.0410521888955309,0.634241889450656,0.44
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   768.771638793145
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=768.77164 (started at 2411.4559)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.744386847205346,0.465935456534318,-0.0692189873376725,-0.067624129591946 4,0.568648772015181,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   741.223147927192
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=741.22315 (started at 2324.9388)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.66217885362191,0.438474928833818,-0.011144207357192,0.0120288807502441,0.594398291774759,0.3289
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   780.836285441667
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=780.83629 (started at 2722.6984)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.690347402204549,0.490311341041875,-0.146390022374425,-0.0195401602514742,0.627402518041284,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   798.994200370794
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=798.9942 (started at 2724.6975)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.679564030022408,0.477657702995945,-0.037910120568797,0.0154876263593496,0.616824927873006,0.37
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   787.032257794103
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=787.03226 (started at 2825.0508)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716093080348548,0.554203770132493,-0.123075968768171,-0.0417698302704187,0.571815555828147,0.42
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   751.084607795309
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=751.08461 (started at 2890.0689)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.66130950231391,0.532629819541967,-0.101641409043792,0.00192165906897013,0.614479809469556,0.398
#> Running DTVAR with 12 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   807.680486764465
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=807.68049 (started at 2653.0473)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.711536873275276,0.486718967297324,-0.182176023621629,-0.0261125305270112,0.599294484813252,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   767.418593752537
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=767.41859 (started at 3168.4061)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.771433701226941,0.515790796170361,-0.0891381959878861,-0.0397577895392098,0.579395644538703,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   838.480905826361
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=838.48091 (started at 3078.7657)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.746043240966985,0.531610392262968,-0.101115749197125,-0.0485678713783249,0.598258784644551,0.39
#>
#> Means of the estimated paramaters per individual.
#>      beta_11      beta_21      beta_31      beta_12      beta_22      beta_32
#>  0.689789887  0.492516179 -0.097208291 -0.001160441  0.603969442  0.400473459
```

```
#>      beta_13      beta_23      beta_33       psi_11       psi_22       psi_33
#> -0.007541712 -0.004560371  0.502174347  0.099612947  0.097622042  0.099534970
#>
#> Estimated paramaters per individual.
#>         beta_11   beta_21     beta_31      beta_12   beta_22   beta_32
#>  [1,] 0.7164616 0.4611301 -0.11105810  0.003019901 0.6279625 0.4261113
#>  [2,] 0.6443768 0.4983199 -0.16013876  0.033945752 0.6020251 0.4385686
#>  [3,] 0.6508042 0.5009362 -0.11786997  0.035858447 0.5810333 0.4552952
#>  [4,] 0.6942525 0.5082547 -0.10560406  0.004036468 0.6322712 0.4501661
#>  [5,] 0.6559221 0.4857988 -0.08397442  0.029817330 0.6561920 0.3855977
#>  [6,] 0.6661111 0.4645191 -0.06553194  0.037981543 0.5764842 0.4011884
#>  [7,] 0.7095131 0.5124997 -0.06928059  0.031107702 0.6143890 0.3797097
#>  [8,] 0.7332648 0.4735630 -0.17302276 -0.010499084 0.6257035 0.4001882
#>  [9,] 0.6684843 0.5113862 -0.02255373 -0.055516112 0.6373854 0.3820877
#> [10,] 0.7188257 0.4823538 -0.16930734 -0.002028199 0.6195524 0.4347762
#> [11,] 0.7085883 0.4753882 -0.08543096 -0.014176941 0.6293655 0.4134227
#> [12,] 0.7207355 0.4995520 -0.14978054 -0.009302026 0.5742157 0.4583398
#> [13,] 0.6778803 0.4318265 -0.16618830 -0.037379735 0.5946225 0.3642645
#> [14,] 0.6099716 0.5393478 -0.11260566  0.015715811 0.6163058 0.4240693
#> [15,] 0.6916238 0.4715445 -0.01002947  0.025056552 0.6333237 0.4381611
#> [16,] 0.6279867 0.5033589 -0.10810363  0.010946465 0.5920935 0.3841485
#> [17,] 0.6710529 0.4498876 -0.14345882  0.076822435 0.6275157 0.3968303
#> [18,] 0.7399223 0.4859270 -0.07175380 -0.034202696 0.6240775 0.4094839
#> [19,] 0.6902135 0.4663627 -0.08795992 -0.017022618 0.6243748 0.3692646
#> [20,] 0.6744566 0.5318842 -0.08387880  0.024221986 0.6057917 0.4026145
#> [21,] 0.6961984 0.4703335 -0.06773466  0.044311167 0.6415002 0.3819198
#> [22,] 0.6716736 0.5532230 -0.03092170  0.027945585 0.5761806 0.3866297
#> [23,] 0.6404996 0.5218374 -0.13380991  0.008751364 0.6075137 0.3509830
#> [24,] 0.7023369 0.5267636 -0.10302942 -0.064679640 0.5662099 0.4158082
#> [25,] 0.7510798 0.5153482 -0.08562616 -0.042317757 0.5653769 0.4564352
#> [26,] 0.7119020 0.4927538 -0.07669837  0.028413366 0.5921316 0.3655838
#> [27,] 0.7173429 0.4838640 -0.03777417 -0.008468604 0.5927307 0.3709144
#> [28,] 0.6713788 0.4957555 -0.10631850  0.022350376 0.5842366 0.4399083
#> [29,] 0.7640326 0.4712870 -0.08222998 -0.001012458 0.6222990 0.3766414
#> [30,] 0.6980205 0.5402567 -0.13067105  0.021901572 0.5363688 0.3970364
#> [31,] 0.7317548 0.4609651 -0.14347168 -0.021699381 0.6049384 0.4208462
#> [32,] 0.6762777 0.5015838 -0.06187973 -0.019357583 0.6145831 0.4066435
#> [33,] 0.7068958 0.5110106 -0.08726787  0.031469450 0.6016102 0.3810928
#> [34,] 0.6539125 0.5105860 -0.10098857 -0.041397676 0.5456068 0.3989759
#> [35,] 0.6642894 0.5102449 -0.10167667 -0.001183680 0.5695084 0.4201438
#> [36,] 0.6113883 0.5245114 -0.12418458  0.021929440 0.5420406 0.3953253
#> [37,] 0.7417519 0.4693206 -0.08799220 -0.038091437 0.6544368 0.3750018
#> [38,] 0.6932275 0.4098153 -0.05145722 -0.020594089 0.6355978 0.4059942
#> [39,] 0.6433048 0.3978567 -0.03864682 -0.007833031 0.6618227 0.3873891
#> [40,] 0.6640983 0.5309907 -0.10697280  0.026019951 0.5843336 0.3782343
#> [41,] 0.6247868 0.4803271 -0.14172022  0.041052189 0.6342419 0.4442859
```

```
#> [42,] 0.7443868 0.4659355 -0.06921899 -0.067624130 0.5686488 0.3592133
#> [43,] 0.6621789 0.4384749 -0.01114421  0.012028881 0.5943983 0.3289104
#> [44,] 0.6903474 0.4903113 -0.14639002 -0.019540160 0.6274025 0.4030966
#> [45,] 0.6795640 0.4776577 -0.03791012  0.015487626 0.6168249 0.3708391
#> [46,] 0.7160931 0.5542038 -0.12307597 -0.041769830 0.5718156 0.4239406
#> [47,] 0.6613095 0.5326298 -0.10164141  0.001921659 0.6144798 0.3987891
#> [48,] 0.7115369 0.4867190 -0.18217602 -0.026112531 0.5992945 0.4082521
#> [49,] 0.7714337 0.5157908 -0.08913820 -0.039757790 0.5793956 0.3691550
#> [50,] 0.7460432 0.5316104 -0.10111575 -0.048567871 0.5982588 0.3913953
#>             beta_13      beta_23   beta_33     psi_11     psi_22     psi_33
#>  [1,]  3.766321e-02 -0.016345474 0.4934312 0.09236374 0.10442078 0.09418048
#>  [2,] -2.868696e-02 -0.040651753 0.5059455 0.09910694 0.09980994 0.10212124
#>  [3,]  3.475715e-02  0.010209415 0.4141094 0.10950856 0.09957811 0.09872075
#>  [4,] -5.200307e-02 -0.030028889 0.5082318 0.08989099 0.10354565 0.09765059
#>  [5,]  3.984700e-02 -0.069530113 0.4829112 0.10637743 0.08962865 0.09469661
#>  [6,] -3.838135e-02  0.062856225 0.5273031 0.08918864 0.09647033 0.10745205
#>  [7,] -1.012232e-03  0.001434448 0.5321423 0.09379959 0.10741337 0.09954281
#>  [8,]  4.158243e-02 -0.002300319 0.4891234 0.10668354 0.09517969 0.10174689
#>  [9,]  1.646599e-02  0.025818019 0.5040378 0.09348925 0.10122975 0.09241113
#> [10,] -3.142686e-02 -0.055668870 0.4925615 0.10216479 0.10046242 0.10672199
#> [11,] -1.377331e-02  0.025907029 0.4755864 0.10501065 0.09658652 0.09725175
#> [12,] -1.756893e-02  0.062898238 0.4615222 0.10523331 0.10042737 0.09981171
#> [13,] -1.745601e-02 -0.028148956 0.5578391 0.09167552 0.09960214 0.09100054
#> [14,]  3.289825e-02  0.025124176 0.4842028 0.09207020 0.10111288 0.10157440
#> [15,] -2.574228e-02 -0.001442593 0.4606027 0.10868707 0.09304484 0.10704468
#> [16,] -2.811782e-02  0.049230543 0.4904419 0.10454709 0.10199743 0.10707069
#> [17,] -8.776754e-02 -0.020012814 0.5466148 0.10586313 0.09201577 0.09419730
#> [18,] -2.300225e-02  0.032711410 0.4693977 0.10696340 0.11474110 0.10854458
#> [19,]  1.314096e-02 -0.047143700 0.5118070 0.09152075 0.09404615 0.08204455
#> [20,] -1.261897e-02  0.009616594 0.5179773 0.09687967 0.08237648 0.09978836
#> [21,] -6.815015e-02  0.007413786 0.5272664 0.09142694 0.09282330 0.09561401
#> [22,] -4.863634e-03 -0.016289743 0.4824611 0.09230807 0.09539849 0.10072420
#> [23,]  2.646204e-02  0.012030152 0.5436758 0.10145891 0.09874026 0.10415321
#> [24,]  3.288922e-02  0.013814703 0.4980909 0.09194537 0.10077807 0.11961502
#> [25,] -1.835506e-02 -0.012896623 0.5157920 0.09533227 0.08987374 0.11049795
#> [26,] -1.430443e-02  0.011062850 0.4992745 0.10674700 0.10481627 0.10395295
#> [27,] -9.382568e-03 -0.023171568 0.4975279 0.10483983 0.09547021 0.10984374
#> [28,] -4.853135e-02  0.044445689 0.4337791 0.10756680 0.09401982 0.10193023
#> [29,] -1.136324e-02 -0.027614476 0.4915875 0.09609721 0.09400949 0.09177987
#> [30,] -6.325697e-02 -0.030491618 0.5275732 0.09851278 0.09148029 0.09455103
#> [31,]  2.381838e-02  0.008561366 0.5415278 0.08655574 0.09611562 0.10603963
#> [32,] -3.632402e-02 -0.017130016 0.5211696 0.10597889 0.09529871 0.09550858
#> [33,] -5.560589e-03 -0.041299898 0.4505113 0.08773347 0.10669455 0.09956571
#> [34,]  1.180648e-02  0.055463831 0.5006901 0.09812655 0.10251583 0.08812632
#> [35,]  2.503484e-02 -0.014371468 0.4952391 0.10577503 0.09759036 0.11414251
```

```
#> [36,] -7.831177e-02 -0.027436482 0.5619025 0.09509774 0.10233767 0.08746661
#> [37,]  5.952974e-02 -0.071780270 0.5050928 0.10569403 0.09820242 0.09704947
#> [38,]  8.170450e-04 -0.016619533 0.5260316 0.10722676 0.10136290 0.09374135
#> [39,]  2.132885e-03 -0.048487951 0.5055569 0.10175729 0.09809730 0.10164009
#> [40,] -2.124955e-04 -0.026087009 0.4682442 0.09969266 0.09250747 0.09729284
#> [41,] -2.016216e-02 -0.033393474 0.5045044 0.09472485 0.09315185 0.10441220
#> [42,]  1.181564e-02  0.005592989 0.5117620 0.10172676 0.08670600 0.10468666
#> [43,] -2.858280e-06  0.028079578 0.5423085 0.09650685 0.09456595 0.09616732
#> [44,] -2.437575e-02  0.023280146 0.4698629 0.09555777 0.10526905 0.09385805
#> [45,] -2.282189e-02  0.003263234 0.5064732 0.09936083 0.10017878 0.09863568
#> [46,] -2.384668e-03 -0.016295694 0.4737930 0.10989716 0.09951131 0.08770628
#> [47,]  5.980008e-04 -0.003089513 0.5597720 0.09813157 0.09974433 0.09096459
#> [48,] -1.493488e-02  0.022705090 0.4872727 0.10268223 0.09593739 0.10178159
#> [49,]  1.132494e-02  0.015525783 0.5218082 0.10660438 0.07986420 0.10695280
#> [50,]  2.118627e-02 -0.047335018 0.5123770 0.10455737 0.10435109 0.09477486
#> Test passed
```

```
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   759.3327230342 57
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=759.33272 (started at 767.23983)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716461585428167,0.461130087272103,-0.111058101747436,0.00301995000147525,0.627962429370563,0.42
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   811.221283431381
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=811.22128 (started at 819.93175)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.644376917883203,0.498319815027411,-0.160138649888563,0.0339457279840114,0.602025160800339,0.438
#> Running DTVAR with 12 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   851.056191919858
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=851.05619 (started at 866.15931)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.650804232121634,0.500936239033408,-0.117869944184811,0.0358583580157441,0.581033136227764,0.455
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   758.939240001087
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=758.93924 (started at 772.80857)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.69425247833575,0.508254712519871,-0.105604056657861,0.00403646721373456,0.632271246543257,0.450
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   755.237014820981
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=755.23701 (started at 771.21109)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.655922064526889,0.485798758415577,-0.0839744808979841,0.0298172928302494,0.656191949541491,0.38
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
```

```
#>
#>  Lowest minimum so far:   767.863852470667
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=767.86385 (started at 783.11641)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.666111127492906,0.464519086417875,-0.0655319230812842,0.0379815355531992,0.576484176671073,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   807.608080756468
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=807.60808 (started at 815.15868)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.709513062158392,0.512499708099355,-0.0692805796170135,0.0311076914010664,0.614389043033527,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   828.951705065182
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=828.95171 (started at 841.57206)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.733264749902263,0.473562995775331,-0.173022759603442,-0.0104990560166985,0.625703542569827,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   746.033688503379
```

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

```
#>
#>  Solution found!   Final fit=746.03369 (started at 764.8049)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.668484300948304,0.511386214511344,-0.0225537199171085,-0.0555161395310054,0.637385350117328,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   851.374280350157
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=851.37428 (started at 861.62867)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.718825604736078,0.482353834528678,-0.169307271979635,-0.00202808228451628,0.61955237324617,0.43
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   799.274821858098
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=799.27482 (started at 805.58759)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.708588218330156,0.475388236341846,-0.0854308202552785,-0.0141769860920425,0.629365591372229,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   840.483916141223
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=840.48392 (started at 851.00179)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.7207355111764,0.499551928552273,-0.14978054704757,-0.00930203523468703,0.574215742590509,0.458
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   718.539233542033
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=718.53923 (started at 741.63598)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.677879886561889,0.431826550789902,-0.166188403762372,-0.0373795473864487,0.594622470548096,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   779.766644444383
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=779.76664 (started at 793.31737)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.609971703606512,0.539347830163897,-0.112605600194933,0.0157157744132437,0.616305785508771,0.424
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   850.752343563441
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=850.75234 (started at 870.41089)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.691623842946204,0.471544492587184,-0.01002945583283,0.025056547442537,0.633323728415006,0.4381
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   872.343067571387
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=872.34307 (started at 882.368)  (1 attempt(s):  1 valid,
0 errors)
#>  Start values from best fit:
#> 0.627986713114911,0.503358910622752,-0.108103614997471,0.0109464800897341,0.592093469438707,0.382
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   764.239047454333
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=764.23905 (started at 784.80812)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.67105294959542,0.449887642591952,-0.143458786756119,0.0768224565147059,0.627515758592816,0.3968
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   957.924375737499
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=957.92438 (started at 976.21158)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.739922367162102,0.48592706713264,-0.0717538245459881,-0.034202697660309,0.624077503132598,0.409
#> Running DTVAR with 12 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   633.011904428516
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=633.0119 (started at 649.09008)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.690213663823057,0.46636269930082,-0.0879598248789163,-0.0170226022112735,0.624374780340516,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   694.317115186692
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=694.31712 (started at 706.63832)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.674456627932046,0.531884177705681,-0.0838787762828761,0.0242219079571848,0.605791639568043,0.40
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   706.595319002982
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=706.59532 (started at 719.7453)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.696198214011712,0.470333597005126,-0.067734751668189,0.0443113891228755,0.641500260684122,0.38
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
```

```
#>
#>  Lowest minimum so far:   750.698512473295
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=750.69851 (started at 759.7683)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.671673609111645,0.553223089870081,-0.0309216931729336,0.0279455905537439,0.576180579623614,0.38
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   833.816258681048
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=833.81626 (started at 845.53725)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.640499502275901,0.521837377170588,-0.133809939141175,0.0087513945145241 8,0.607513714681973,0.35
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   863.215725480724
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=863.21573 (started at 880.21941)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.70233691503351,0.52676364141794,-0.103029350673975,-0.0646796152983735,0.566209875148732,0.4158
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   782.276989781736
```

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

```
#>
#>  Solution found!   Final fit=782.27699 (started at 802.16016)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.751080033038349,0.515348048019857,-0.0856262567981077,-0.0423177000638963,0.565376873969739,0.2
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   885.4000818504
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=885.40008 (started at 891.24522)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.711902092021382,0.492753826033058,-0.0766983353095619,0.0284133293266239,0.592131583550737,0.30
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   870.776467535192
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=870.77647 (started at 879.61589)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.717343023727884,0.483863994996277,-0.037774213058378,-0.00846865630005986,0.592730738847854,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   825.091328764672
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=825.09133 (started at 836.69057)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.671378801101552,0.495755542356324,-0.106318444891222,0.0223503254606083,0.584236589649017,0.43
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   732.657907507961
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=732.65791 (started at 743.57505)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.764032687703439,0.471287014221847,-0.0822300063767158,-0.00101252774380534,0.62229897574047,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   726.376014908232
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=726.37601 (started at 742.41338)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.698020502933625,0.540256680629718,-0.130671062767118,0.021901574828572,0.536368802056704,0.397
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   743.062534381883
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=743.06253 (started at 756.40648)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.731754806899753,0.460964906274982,-0.143471428894092,-0.0216994359253728,0.604938695643486,0.42
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   797.484023499046
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=797.48402 (started at 806.83396)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.676277609893595,0.501583766265347,-0.0618798951792299,-0.0193574397570838,0.614583011607736,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   770.97749467596
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=770.97749 (started at 784.17806)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.706895709607195,0.511010671262467,-0.0872678739613862,0.0314695930810643,0.601610179752207,0.38
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   749.349505885138
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=749.34951 (started at 762.66042)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.653912563390342,0.510586038131102,-0.100988567723116,-0.0413977100766392,0.545606865185711,0.39
#> Running DTVAR with 12 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   889.86167650208
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=889.86168 (started at 899.62257)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.664289357214513,0.5102449470297 33,-0.101676632875796,-0.00118367609196996,0.569508435314849,0.
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   725.595924156994
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=725.59592 (started at 751.84398)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.611388387413602,0.524511305659563,-0.124184601280723,0.0219294512140722,0.542040628278474,0.395
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   812.090920433347
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=812.09092 (started at 825.67386)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.741751985990055,0.469320568926058,-0.08799220120145,-0.0380914980600275,0.654436815220724,0.375
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
```

```
#>
#>  Lowest minimum so far:   815.197848341626
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=815.19785 (started at 829.66831)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.693227358332933,0.409815382546601,-0.0514574408005689,-0.0205940175054711,0.635597713904742,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   820.593168415362
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=820.59317 (started at 838.4595)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.643304808567l6,0.397856533791987,-0.0386467541729308,-0.00783303856946256,0.661822861740966,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   752.466226469853
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=752.46623 (started at 760.05983)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.664098292782441,0.530990710130654,-0.106972799788052,0.0260199662012602,0.584333638667574,0.378
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   766.2199554157l5
```

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

```
#>
#>  Solution found!   Final fit=766.21996 (started at 777.65895)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.624786753491203,0.480326983366548,-0.141720275922804,0.041052227184432,0.634241947184696,0.444
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   768.77163879313
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=768.77164 (started at 784.45062)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.744386876914039,0.465935520562982,-0.0692190128049471,-0.0676241467206233,0.568648789348167,0.
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   741.223147927187
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=741.22315 (started at 755.42182)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.662178896542466,0.438474917081386,-0.0111442189404204,0.01202887882265,0.594398301245561,0.328
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   780.836285441667
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=780.83629 (started at 791.00989)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.69034740431757,0.49031134831171,-0.146390033092329,-0.0195401623412294,0.627402508235676,0.403
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   798.99420037079
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=798.9942 (started at 803.52761)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.67956403208763,0.47765774431945,-0.0379101593064794,0.0154875956487848,0.616824904549432,0.370
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   787.032257794067
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=787.03226 (started at 800.57952)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.71609313261114,0.554203807091305,-0.123075940611452,-0.0417698485929651,0.571815552896042,0.423
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   751.084607795309
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=751.08461 (started at 761.5739)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.66130950018045,0.532629821554621,-0.101641402677008,0.00192166165092056,0.614479804396606,0.398
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   807.680486764455
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=807.68049 (started at 816.98743)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.71153682967932,0.486719003709776,-0.182176075602796,-0.026112528660641 9,0.5992944461216,0.40825
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   767.418593752494
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=767.41859 (started at 787.98087)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.771433727134554,0.515790729464576,-0.089138196614291,-0.0397577183528818,0.579395652411828,0.36
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   838.480905826358
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=838.48091 (started at 847.96006)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.746043269189541,0.531610400000595,-0.101115741712202,-0.0485678796475715,0.598258794430362,0.39

#> Test passed
```

```
#> test-external-fitDTVARMx-fit-dt-var-id-mx-psi-full-alpha
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   751.3197075867 26
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=751.31971 (started at 2229.3757)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.7106986726 12239,0.464231679553437,-0.11102116306199,0.00283746175984587,0.627898442522914,0.42
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   799.929098809422
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=799.9291 (started at 2098.6642)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.677525000489932,0.500259485778035,-0.185207023656727,0.0283007575306138,0.633238116592514,0.47
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   846.12692467565
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=846.12692 (started at 2172.2392)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.659549855212527,0.505094348530151,-0.121377866583575,0.0309365889220294,0.582060023772473,0.46
#> Running DTVAR with 21 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   750.995506579238
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=750.99551 (started at 2247.5487)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.692283499252786,0.517692825650103,-0.103818065095504,0.00519515130491422,0.627537167662428,0.4
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   749.079788124355
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=749.07979 (started at 2226.3377)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.64800198571548,0.484658790388966,-0.0827367220426509,0.026065172092894,0.66395955968023,0.37175
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   759.575316725953
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=759.57532 (started at 2066.7412)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.685833291967864,0.483930775947376,-0.0741863593865353,0.0321051998353937,0.568802735303719,0.4
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
```

```
#>
#>  Lowest minimum so far:   797.85700594014
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=797.85701 (started at 2447.0804)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.726950331024053,0.530434309148715,-0.0762157344291397,0.0256326786115388,0.603860446458367,0.3
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   824.489515851008
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=824.48952 (started at 2396.895)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.749008469762923,0.486532736972005,-0.179091877832254,-0.0187933732590467,0.620270676365448,0.3
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   729.933335460899
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=729.93334 (started at 2129.414)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.655513790215204,0.501708527745329,-0.0273504582922774,-0.0655217915276379,0.636012939818082,0.3
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   845.526274930178
```

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

```
#>
#>  Solution found!   Final fit=845.52627 (started at 2328.0718)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716500844776479,0.482524112964022,-0.1676371567167685,-0.00119803355301945,0.621892358154475,0.
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   796.50621914597
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=796.50622 (started at 2308.0631)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.706475912436415,0.4745290745685528,-0.0857508421450056,-0.0128762528939037,0.634988337380834,0.
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   833.620336510482
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=833.62034 (started at 2378.7879)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.74753729677547,0.517932376070432,-0.1586272181877704,-0.02788300577771328,0.56635455981283,0.467
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   706.628035023615
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=706.62804 (started at 1883.2835)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.76068616797108,0.486744236879712,-0.172909051703362,-0.068536065283611,0.57373702815362,0.3536
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   771.756028431703
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=771.75603 (started at 2148.3924)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.617188192634596,0.545537645273523,-0.117011297566589,0.0141512913264305,0.618479491891684,0.428
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   845.386465180059
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=845.38647 (started at 2403.5612)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.717188977320426,0.485941806464164,-0.0120269302304653,0.0162051020954127,0.633223405735365,0.43
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   857.992340234505
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=857.99234 (started at 2095.0482)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.614543082561941,0.488260415329601,-0.128076482662355,0.0179190761224814,0.631965662147384,0.409
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   757.947096196131
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=757.9471 (started at 2310.0413)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.667885537571973,0.453507395992935,-0.141449922943678,0.0773218298346134,0.626895009665304,0.396
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   943.363193760907
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=943.36319 (started at 2503.6656)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.792445239739491,0.534094800170402,-0.0791212923661144,-0.0502954668654696,0.601289504555518,0.4
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   629.748761930334
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=629.74876 (started at 1906.4761)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6900594415022,0.46537217053471,-0.0881513919166146,-0.0184132467702307,0.623727538341753,0.372
#> Running DTVAR with 21 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   685.977363678451
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=685.97736 (started at 2265.956)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.684689207162314,0.530779810492745,-0.0899771192503532,0.019218813174161,0.617417403969898,0.410
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   699.293873053153
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=699.29387 (started at 2239.7701)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.69592707255325,0.464240179154982,-0.0738083851134474,0.0450222997042919,0.651999692012709,0.396
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   742.366071045534
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=742.36607 (started at 2117.0926)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.668070309597822,0.545882523930911,-0.0338979777700287,0.0206921660402988,0.573261242507558,0.38
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
```

```
#>
#>  Lowest minimum so far:   828.704031058726
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=828.70403 (started at 2258.2304)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.640589698052503,0.522165271636663,-0.135820548692625,0.00877497292596611,0.607186805106583,0.35
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   855.984992069123
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=855.98499 (started at 2178.3975)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.730870866491904,0.535905330393162,-0.115086040758527,-0.0797037219001384,0.578920851898373,0.43
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   773.715854937933
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=773.71585 (started at 2225.8175)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.821135343380756,0.566515652694628,-0.0930378545235778,-0.0736306347425359,0.545074723970665,0.4
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   882.555537506634
```

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

```
#>
#>  Solution found!   Final fit=882.55554 (started at 2385.7275)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.708978400445967,0.484454669873341,-0.0818076153869978,0.0280335168005726,0.606310488637623,0.3
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   861.688059844655
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=861.68806 (started at 2296.2083)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.712279202763791,0.472005444239333,-0.0473022752724131,-0.00606864846439764,0.624794384984679,0
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   811.249677111081
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=811.24968 (started at 2174.2644)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.667835296428894,0.497259087992504,-0.102642975010063,0.0292084904037806,0.583428334883088,0.412
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   718.013120776681
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=718.01312 (started at 2324.5758)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.776148218481352,0.477957522158333,-0.0808564054414659,-0.00116572739505746,0.6192626189242,0.3
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   721.641929833905
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=721.64193 (started at 2045.8485)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.696022650363952,0.5213100825671,-0.143890826968485,0.0244572977121305,0.57354679937456,0.42188
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   741.392846923845
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=741.39285 (started at 2162.7862)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.747334156147187,0.469595888434031,-0.146642807205517,-0.0278452470079462,0.601291315713392,0.4
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   793.752771312849
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=793.75277 (started at 2143.5016)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.676304106609393,0.501899363478234,-0.0615343748677316,-0.0196665672098006,0.613320191153104,0.
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   758.375935370792
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=758.37594 (started at 2135.0557)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.7036019079200 78,0.506819022022055,-0.0888938750069582,0.0283675559538009,0.596297737890487,0.3
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   745.480840265412
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=745.48084 (started at 1911.4686)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.665555643668311,0.520562009585226,-0.104398962956006,-0.0456535282738814,0.541193346374449,0.4
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   879.218985519419
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=879.21899 (started at 2154.5893)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.659304160709976,0.510856504825393,-0.095169501077983,-0.00304603544496706,0.570279663573841,0.
#> Running DTVAR with 21 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   713.7670686665175
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=713.76707 (started at 1889.3562)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.623964358921534,0.53895595852417,-0.130977605981557,0.0179518627599035,0.533324895914419,0.402
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   810.5898777162439
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=810.58988 (started at 2389.0484)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.741352636622978,0.4703026780555133,-0.0888841152969463,-0.0378899628498616,0.653905711823932,0.3
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   805.71871660322
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=805.71872 (started at 2144.8002)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.732506714721842,0.428151583151002,-0.0534038843895698,-0.0350866525204001,0.627025776567685,0.3
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
```

```
#>
#>  Lowest minimum so far:   805.880437088142
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=805.88044 (started at 1939.0374)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.649910066460673,0.400546472149857,-0.0483449427444411,-0.00821085321310572,0.662312864495339,0
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   749.639553147869
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=749.63955 (started at 2044.3254)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.663783936234673,0.528200072135185,-0.113204885470933,0.0261182865896794,0.597812038694944,0.388
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   756.700563528327
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=756.70056 (started at 2074.7797)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.619092605005105,0.47522013236907,-0.136693687329742,0.038436788861946,0.659557600992992,0.4455
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   754.801122634275
```

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

```
#>
#>  Solution found!   Final fit=754.80112 (started at 2004.5256)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.734461372040959,0.480515707690313,-0.061920028819012 4,-0.0653753574131933,0.565140558763367,0.3
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   734.94662085054
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=734.94662 (started at 1960.8679)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.662330616821695,0.4389457988772 93,-0.0107644398673581,0.0111168460250986,0.59135937876082,0.32
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   777.291138049553
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=777.29114 (started at 2175.7975)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.700342932428139,0.497603147250635,-0.149263023324469,-0.0231170875482341,0.624888187272695,0.4
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   793.282278076025
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=793.28228 (started at 2177.0374)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.67466077995952,0.485613131642965,-0.0386786786820122,0.0167231308538318,0.614962081229062,0.371
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   780.490732948688
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=780.49073 (started at 2228.0785)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716465011089326,0.559307893207383,-0.124313388622069,-0.0422768274512618,0.563292412417457,0.42
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   744.684793727984
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=744.68479 (started at 2268.5273)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.683502918026989,0.557644007056438,-0.099904046655935 4,-0.00802094399500194,0.608660891455904,0.
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   802.891504569595
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=802.8915 (started at 2135.2237)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.713084475222978,0.470303115621683,-0.19522601244116,-0.0290643724684249,0.629366476413658,0.43
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   983.926205234353
#>  OpenMx status code 6 not in list of acceptable status codes, (0,0)
#>  Not all eigenvalues of the Hessian are positive:  6537261980.42177, 21569705.203697,
18460647.7122008, 2719810.9682421, 1367644.11378799, 472803.356287597, 157624.99943847,
71226.8201382409, 28431.3700961154, 20936.2308906318, 11828.9623120692, 10310.2508198982,
5427.90448960612, 2509.4756141066, 1135.59751076671, 407.115831221992, 84.9292466471414,
28.2747583430169, 10.2189577848048, 6.04118515991301, -44.1793788991374
#>
#> Beginning fit attempt 1 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   983.742587880994
#>  OpenMx status code 6 not in list of acceptable status codes, (0,0)
#>  Not all eigenvalues of the Hessian are positive:  6738744744.9644, 22058980.6371999,
18943601.8050484, 2723092.37415225, 1362801.56150279, 474391.808313216, 158655.721425868,
73310.1666039691, 30953.8565048821, 21394.8753746167, 11852.3561015945, 10967.365210173,
5374.58382331201, 2497.8682531069, 1143.01888945115, 465.968686177121, 247.131341242092,
28.2430587696898, 11.3215508509219, 4.32841639660657, -5.90455754220812
#>
#> Beginning fit attempt 2 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   983.742587876419
#>  OpenMx status code 6 not in list of acceptable status codes, (0,0)
#>  Not all eigenvalues of the Hessian are positive:  6738744771.94772, 22059210.7301514,
18943801.9486551, 2723092.27014832, 1362797.61346881, 474365.853576842, 158789.815915892,
73306.785460986, 31282.4201939306, 21336.4190962188, 11851.1776611365, 11115.0599051787,
5359.03477373588, 2494.78826421131, 1287.20996804726, 396.90904729614, 202.984714443159,
32.0695541185546, 28.089816977511, 8.20408402713846, -20.078850404533
#>
#> Beginning fit attempt 3 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 4 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 5 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 6 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 7 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 8 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 9 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 10 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt worse than current best:   984.09601099863 vs 983.742587876419
#>
#> Beginning fit attempt 11 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 12 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 13 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 14 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 15 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 16 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 17 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 18 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 19 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 20 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 21 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   911.391417384424
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=911.39142 (started at 2421.1065)  (22 attempt(s):  5
```

```
valid, 17 errors)
#>  Start values from best fit:
#> -0.848498699631185,-0.898093018253193,0.12128292880814,1.30261858227797,1.69189852989285,0.198886
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   835.124892149316
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=835.12489 (started at 2367.2177)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.749524973072166,0.535967290556484,-0.10250210583215,-0.0499275891699892,0.596349748089177,0.390

#>
#> Means of the estimated paramaters per individual.
#>       beta_11       beta_21       beta_31       beta_12       beta_22
#>  6.661401e-01  4.701276e-01 -9.678665e-02  2.148288e-02  6.283927e-01
#>       beta_32       beta_13       beta_23       beta_33       alpha_1
#>  3.982299e-01 -2.360436e-02 -2.020514e-02  5.124995e-01  1.670446e-03
#>       alpha_2       alpha_3        psi_11        psi_21        psi_22
#> -4.762867e-04  2.640003e-05  9.365910e-02  3.779000e-04  9.420865e-02
#>        psi_31        psi_32        psi_33      theta_11      theta_22
#>  4.550814e-04 -3.098191e-04  9.187499e-02  6.701631e-03  3.475490e-03
#>      theta_33
#>  5.741959e-03
#>
#> Estimated paramaters per individual.
#>          beta_11    beta_21     beta_31      beta_12   beta_22   beta_32
#>  [1,]  0.7106987  0.4642317 -0.11102116  0.002837462 0.6278984 0.4261070
#>  [2,]  0.6775250  0.5002595 -0.18520702  0.028300758 0.6332381 0.4709039
#>  [3,]  0.6595499  0.5050943 -0.12137787  0.030936589 0.5820600 0.4622102
#>  [4,]  0.6922835  0.5176928 -0.10381807  0.005195151 0.6275372 0.4489718
#>  [5,]  0.6480020  0.4846588 -0.08273672  0.026065172 0.6639596 0.3717538
#>  [6,]  0.6858333  0.4839308 -0.07418636  0.032105200 0.5688027 0.4067868
#>  [7,]  0.7269503  0.5304343 -0.07621573  0.025632679 0.6038604 0.3782605
#>  [8,]  0.7490085  0.4865327 -0.17909188 -0.018793373 0.6202707 0.3950900
#>  [9,]  0.6555138  0.5017085 -0.02735046 -0.065521792 0.6360129 0.3740695
#> [10,]  0.7165008  0.4825241 -0.16763716 -0.001198034 0.6218924 0.4308903
#> [11,]  0.7064759  0.4745291 -0.08575084 -0.012876253 0.6349883 0.4115109
#> [12,]  0.7475373  0.5179324 -0.15862722 -0.027883006 0.5663546 0.4675853
#> [13,]  0.7606862  0.4867442 -0.17290905 -0.068536065 0.5737370 0.3536775
```

```
#> [14,]  0.6171882  0.5455376 -0.11701130  0.014151291 0.6184795 0.4287168
#> [15,]  0.7171890  0.4859418 -0.01202693  0.016205102 0.6332234 0.4383186
#> [16,]  0.6145431  0.4882604 -0.12807648  0.017919076 0.6319657 0.4090027
#> [17,]  0.6678855  0.4535074 -0.14144992  0.077321830 0.6268950 0.3962430
#> [18,]  0.7924452  0.5340948 -0.07912129 -0.050295467 0.6012895 0.4128269
#> [19,]  0.6900594  0.4653722 -0.08815139 -0.018413247 0.6237275 0.3721653
#> [20,]  0.6846892  0.5307798 -0.08997712  0.019218813 0.6174174 0.4109726
#> [21,]  0.6959271  0.4642402 -0.07380839  0.045022300 0.6519997 0.3964811
#> [22,]  0.6680703  0.5458825 -0.03389798  0.020692166 0.5732612 0.3845275
#> [23,]  0.6405897  0.5221653 -0.13582055  0.008774973 0.6071868 0.3539829
#> [24,]  0.7308709  0.5359053 -0.11508604 -0.079703722 0.5789209 0.4380567
#> [25,]  0.8211353  0.5665157 -0.09303785 -0.073630635 0.5450747 0.4609424
#> [26,]  0.7089784  0.4844547 -0.08180762  0.028033517 0.6063105 0.3741005
#> [27,]  0.7122792  0.4720054 -0.04730228 -0.006068648 0.6247944 0.3807489
#> [28,]  0.6678353  0.4972591 -0.10264298  0.029208490 0.5834283 0.4122017
#> [29,]  0.7761482  0.4779575 -0.08085641 -0.001165727 0.6192626 0.3559315
#> [30,]  0.6960227  0.5213101 -0.14389083  0.024457298 0.5735468 0.4218847
#> [31,]  0.7473342  0.4695959 -0.14664281 -0.027845247 0.6012913 0.4189764
#> [32,]  0.6763041  0.5018994 -0.06153437 -0.019666567 0.6133202 0.4056739
#> [33,]  0.7036019  0.5068190 -0.08889388  0.028367556 0.5962977 0.3572080
#> [34,]  0.6655556  0.5205620 -0.10439896 -0.045653528 0.5411933 0.4017449
#> [35,]  0.6593042  0.5108565 -0.09516950 -0.003046035 0.5702797 0.4041871
#> [36,]  0.6239644  0.5389560 -0.13097761  0.017951863 0.5333249 0.4025554
#> [37,]  0.7413526  0.4703027 -0.08888412 -0.037889963 0.6539057 0.3754386
#> [38,]  0.7325067  0.4281516 -0.05340388 -0.035086653 0.6270258 0.3923603
#> [39,]  0.6499101  0.4005465 -0.04834494 -0.008210853 0.6623129 0.3645493
#> [40,]  0.6637839  0.5282001 -0.11320489  0.026118287 0.5978120 0.3885817
#> [41,]  0.6190926  0.4752201 -0.13669369  0.038436789 0.6595576 0.4455610
#> [42,]  0.7344614  0.4805157 -0.06192003 -0.065375357 0.5651406 0.3577244
#> [43,]  0.6623306  0.4389458 -0.01076444  0.011116846 0.5913594 0.3262655
#> [44,]  0.7003429  0.4976031 -0.14926302 -0.023117088 0.6248882 0.4041992
#> [45,]  0.6746608  0.4856131 -0.03867868  0.016723131 0.6149621 0.3710278
#> [46,]  0.7164650  0.5593079 -0.12431339 -0.042276827 0.5632924 0.4261116
#> [47,]  0.6835029  0.5576440 -0.09990405 -0.008020944 0.6086609 0.4023425
#> [48,]  0.7130845  0.4703031 -0.19522601 -0.029064372 0.6293665 0.4324609
#> [49,] -0.8484987 -0.8980930  0.12128293  1.302618582 1.6918985 0.1988867
#> [50,]  0.7495250  0.5359673 -0.10250211 -0.049927589 0.5963497 0.3907161
#>           beta_13       beta_23   beta_33       alpha_1      alpha_2
#>  [1,]  0.037187679 -0.0158791190 0.4934294 -1.870585e-02  0.009661642
#>  [2,] -0.031748224 -0.0587713673 0.4860697  4.108770e-03  0.007536375
#>  [3,]  0.033851805  0.0062961649 0.4117845 -1.143328e-02 -0.011172534
#>  [4,] -0.051454448 -0.0343578995 0.5083524 -6.646253e-03  0.034295198
#>  [5,]  0.041156159 -0.0786923383 0.5182915  2.300667e-02 -0.004606659
#>  [6,] -0.042764305  0.0680507953 0.5142072 -1.421944e-02  0.010092140
#>  [7,] -0.002030682  0.0066230646 0.5449144  8.521882e-03 -0.024890706
```

```
#>  [8,]  0.041346184  0.0004006387 0.5027012  1.187351e-02 -0.003479388
#>  [9,] -0.005119899  0.0126494875 0.5073068 -4.224745e-02 -0.022542364
#> [10,] -0.033071387 -0.0572314197 0.5044839 -1.132132e-02  0.009890299
#> [11,] -0.017188594  0.0249063406 0.4875534  1.021090e-02 -0.010555201
#> [12,] -0.019290779  0.0619907999 0.4583490  2.974954e-02  0.013266224
#> [13,]  0.004613353 -0.0176490076 0.6045884  4.000771e-03 -0.017745091
#> [14,]  0.033085969  0.0236292836 0.4799364  1.342562e-03 -0.003313349
#> [15,] -0.026547075 -0.0050662404 0.4663391  4.480441e-05  0.008125727
#> [16,] -0.033979195  0.0337623281 0.4773475  2.502208e-02 -0.023993736
#> [17,] -0.086460793 -0.0214439147 0.5461423 -1.403758e-02  0.016215691
#> [18,] -0.019000739  0.0345985364 0.4685129 -1.672372e-03  0.044051710
#> [19,]  0.013588127 -0.0470029039 0.5107328 -7.499714e-03 -0.011197756
#> [20,] -0.012718027 -0.0045512103 0.5126020  3.033749e-03  0.024570097
#> [21,] -0.068552003  0.0028119482 0.5185428  1.003682e-03 -0.013926356
#> [22,] -0.011883821 -0.0275253092 0.4925910  2.328495e-02  0.027523031
#> [23,]  0.026403665  0.0132142839 0.5342734  6.986097e-05  0.004036764
#> [24,]  0.037965985  0.0050748402 0.4859693  5.415607e-03  0.003473298
#> [25,] -0.012421185 -0.0076097653 0.5143979  1.161089e-02 -0.005689694
#> [26,] -0.016441421  0.0036110998 0.4954773  1.510326e-02  0.002304208
#> [27,] -0.007647250 -0.0374521591 0.5080931 -1.507793e-02  0.021646545
#> [28,] -0.063673451  0.0471041600 0.4891698  1.222714e-02 -0.008404558
#> [29,] -0.024133690 -0.0356471880 0.5455938  4.280109e-04  0.020725864
#> [30,] -0.063699128 -0.0503634982 0.5182630  5.788324e-03 -0.010763785
#> [31,]  0.024954287  0.0100507327 0.5489802 -1.846239e-03  0.005144823
#> [32,] -0.037939611 -0.0209371663 0.5191561 -6.579899e-03 -0.018388480
#> [33,] -0.016390753 -0.0512552023 0.5304857 -2.070848e-02 -0.026239599
#> [34,]  0.013781511  0.0575430165 0.4989652  1.875430e-03  0.009826612
#> [35,]  0.025889491 -0.0161032994 0.5302492  2.083775e-02 -0.002768466
#> [36,] -0.076296363 -0.0227447156 0.5574966 -2.867513e-03  0.019561001
#> [37,]  0.059329874 -0.0712646476 0.5046358  2.720071e-03 -0.007104171
#> [38,]  0.006054495 -0.0132730765 0.5639323 -1.471303e-03 -0.009900936
#> [39,] -0.008262304 -0.0626839323 0.5487738  1.116893e-02  0.017685734
#> [40,] -0.001381801 -0.0325440105 0.4661723 -1.250741e-02  0.010923411
#> [41,] -0.016613432 -0.0490117430 0.5227174 -1.944103e-02  0.020580149
#> [42,]  0.016528277 -0.0011637420 0.5080349  2.305671e-02 -0.033737152
#> [43,] -0.001788793  0.0219324027 0.5368808 -6.020145e-03 -0.020141303
#> [44,] -0.023165912  0.0234530857 0.4648436 -3.521815e-03 -0.005059118
#> [45,] -0.023914764  0.0048217738 0.5063029  1.484101e-02 -0.024566659
#> [46,] -0.002831022 -0.0192143727 0.4743536 -2.731743e-03 -0.033806401
#> [47,]  0.004403402 -0.0041261708 0.5552829  1.534766e-02 -0.015665943
#> [48,] -0.013679671  0.0084440421 0.4757229  3.731391e-06 -0.010189916
#> [49,] -0.749175008 -0.5714627152 0.6910888  2.419548e-02  0.001106974
#> [50,]  0.020907147 -0.0461978783 0.5148835 -5.814685e-03  0.013791468
#>             alpha_3       psi_11        psi_21     psi_22        psi_31
#>  [1,]  0.0001957051 9.202830e-02 -0.0051562587 0.10433085 -2.141365e-03
```

```
#>  [2,]  0.0254663545 8.780434e-02 -0.0078299327 0.08152376 -8.266348e-04
#>  [3,]  0.0085328225 1.057803e-01 -0.0076395132 0.09622000 -2.376609e-03
#>  [4,]  0.0060935456 8.984492e-02 -0.0048309472 0.10240359 -1.803522e-03
#>  [5,]  0.0022292414 1.058182e-01 -0.0003667732 0.08758454 -6.547705e-03
#>  [6,] -0.0365336263 8.225264e-02 -0.0012971731 0.09528259 -1.044347e-03
#>  [7,]  0.0229637531 8.776423e-02 -0.0046768995 0.10590762  6.456526e-03
#>  [8,]  0.0153511433 9.990136e-02 -0.0028022347 0.09417564  3.640169e-03
#>  [9,] -0.0185511637 9.187538e-02 -0.0038749441 0.09903181 -2.391790e-03
#> [10,] -0.0036973021 1.020335e-01  0.0077585939 0.09917383 -5.468066e-03
#> [11,]  0.0038526480 1.048889e-01  0.0013562373 0.09272379  2.747069e-03
#> [12,] -0.0044993851 9.176373e-02 -0.0042444610 0.09521532 -1.258939e-03
#> [13,]  0.0008834732 6.901678e-02 -0.0026150344 0.09613494 -2.099031e-04
#> [14,]  0.0178756709 8.979469e-02 -0.0045499607 0.09812157 -7.414210e-03
#> [15,] -0.0061844855 9.941874e-02 -0.0077335208 0.08895881  1.990058e-03
#> [16,]  0.0167430234 1.039326e-01  0.0048050855 0.08244241 -8.588023e-03
#> [17,]  0.0074538736 1.056477e-01  0.0055370398 0.09174474 -6.087622e-03
#> [18,] -0.0037761629 8.662441e-02 -0.0108460406 0.10975134  7.809170e-03
#> [19,]  0.0112574491 9.146447e-02  0.0009572823 0.09331407  3.701308e-03
#> [20,]  0.0192431898 9.409667e-02  0.0035190836 0.07252218 -9.166129e-04
#> [21,]  0.0259577461 9.145481e-02 -0.0001620030 0.08622731  6.375147e-03
#> [22,]  0.0024645227 9.178733e-02 -0.0009865200 0.09176519  3.370831e-03
#> [23,] -0.0297515901 1.014614e-01  0.0018446800 0.09872807  3.826627e-03
#> [24,] -0.0306644384 8.397587e-02  0.0026566504 0.09029587  1.516951e-03
#> [25,] -0.0089301346 7.232206e-02 -0.0110899212 0.08568624  3.513202e-03
#> [26,]  0.0006443159 1.065245e-01  0.0010099291 0.09738887  1.028405e-03
#> [27,] -0.0011418723 1.045495e-01  0.0044121989 0.07659872  4.864408e-03
#> [28,]  0.0220569313 1.072785e-01 -0.0071247115 0.09401888  5.112588e-03
#> [29,]  0.0011170133 9.086836e-02 -0.0065261228 0.09295324  3.732535e-03
#> [30,] -0.0059528685 9.846708e-02 -0.0042822134 0.07491826  2.634268e-03
#> [31,] -0.0062155932 8.200810e-02  0.0004955866 0.09562426  3.848670e-03
#> [32,] -0.0109280130 1.059519e-01 -0.0008975113 0.09497606  2.209874e-03
#> [33,]  0.0136098191 8.731141e-02  0.0024874118 0.10599266  2.782229e-03
#> [34,] -0.0135836755 9.455021e-02 -0.0014432997 0.10171983  3.877281e-03
#> [35,] -0.0112734101 1.053798e-01  0.0016512495 0.09755168  4.666000e-03
#> [36,] -0.0262003231 9.146438e-02  0.0047141467 0.10119350 -5.325077e-03
#> [37,]  0.0075600689 1.056850e-01  0.0034148906 0.09815066  3.035208e-04
#> [38,]  0.0204057272 9.380252e-02  0.0014647531 0.10030306  6.295353e-03
#> [39,]  0.0284328856 9.864440e-02 -0.0097318142 0.09738095  2.131606e-03
#> [40,] -0.0009284632 9.866818e-02 -0.0024709214 0.08494549 -1.550187e-03
#> [41,]  0.0245897647 9.437172e-02 -0.0010461192 0.08291107  3.449120e-03
#> [42,] -0.0175519778 1.012317e-01 -0.0012901963 0.08564770  6.710323e-03
#> [43,] -0.0179440019 9.646927e-02  0.0010742073 0.09418819  1.313287e-03
#> [44,] -0.0181079337 9.247868e-02  0.0032306847 0.10470320 -1.672919e-03
#> [45,]  0.0025376303 9.914489e-02 -0.0008537561 0.09958428  4.054994e-03
#> [46,]  0.0081774323 1.098807e-01 -0.0012689909 0.09843405 -2.057303e-03
```

```
#> [47,] -0.0231035467 8.973908e-02 -0.0013619179 0.09799895 -5.912414e-04
#> [48,]  0.0190498614 1.026535e-01 -0.0004343730 0.08089184 -8.619657e-05
#> [49,] -0.0224874648 3.782807e-20  0.0866321973 0.10925061 -2.555915e-02
#> [50,] -0.0154181784 1.030780e-01 -0.0006928220 0.10384045  2.709977e-03
#>              psi_32     psi_33      theta_11      theta_22      theta_33
#>  [1,] -0.0088021068 0.09418040 2.225074e-308 2.225074e-308 2.225074e-308
#>  [2,]  0.0048441629 0.09861918  7.635428e-03  1.214964e-02 2.225074e-308
#>  [3,] -0.0039419019 0.09825504  2.537749e-03  1.947591e-03 2.225074e-308
#>  [4,] -0.0030018002 0.09705110  1.103270e-16  4.650447e-16  4.463811e-04
#>  [5,]  0.0005569239 0.07742666 2.225074e-308  1.321170e-03  1.371482e-02
#>  [6,] -0.0020117999 0.10620986  4.624559e-03  1.532108e-18 2.225074e-308
#>  [7,] -0.0032778055 0.09011109  3.828384e-03 2.225074e-308  6.893289e-03
#>  [8,]  0.0053487276 0.09226975  4.300307e-03 2.225074e-308  7.303878e-03
#>  [9,] -0.0067908812 0.08488223  2.505162e-17  1.295480e-03  5.575644e-03
#> [10,]  0.0001707238 0.09932567  3.646624e-18  8.547026e-04  5.771767e-03
#> [11,]  0.0026237437 0.08882527 2.225074e-308  2.750208e-03  6.369145e-03
#> [12,]  0.0005874455 0.09913466  8.160134e-03  2.260788e-03 2.225074e-308
#> [13,]  0.0081695079 0.06875090  1.507875e-02 2.225074e-308  1.626778e-02
#> [14,]  0.0072010162 0.10099369  1.700102e-03  1.717138e-03 2.225074e-308
#> [15,]  0.0064588183 0.10225408  6.168698e-03  1.877491e-03  3.645112e-03
#> [16,] -0.0056278340 0.10512520 2.225074e-308  1.351710e-02 2.225074e-308
#> [17,] -0.0023145275 0.09414657  1.762356e-18 2.225074e-308  7.815192e-19
#> [18,] -0.0005536169 0.10846910  1.283133e-02 2.225074e-308 2.225074e-308
#> [19,]  0.0028601799 0.08186593 2.225074e-308  4.353114e-04 2.225074e-308
#> [20,]  0.0002573870 0.09411563  1.889896e-03  6.489151e-03  3.157475e-03
#> [21,] -0.0020694192 0.09444243  3.351965e-18  4.428419e-03  1.012534e-17
#> [22,] -0.0047277314 0.09413146 2.225074e-308  2.211939e-03  5.096918e-03
#> [23,]  0.0003352447 0.10330417  4.264469e-19 2.225074e-308 2.225074e-308
#> [24,]  0.0043196333 0.11721376  5.210707e-03  6.934675e-03 2.225074e-308
#> [25,]  0.0016103675 0.11026612  1.415285e-02 2.225074e-308 2.225074e-308
#> [26,] -0.0063171957 0.10324752 2.225074e-308  5.437902e-03 2.225074e-308
#> [27,] -0.0043487303 0.09918625 2.225074e-308  1.312421e-02  7.583564e-03
#> [28,]  0.0061526043 0.07075368 2.225074e-308 2.225074e-308  2.522987e-02
#> [29,] -0.0096244904 0.06738653  3.129737e-03 2.225074e-308  1.934818e-02
#> [30,] -0.0019264468 0.09257805 2.225074e-308  1.248616e-02 2.225074e-308
#> [31,]  0.0028504788 0.10125864  2.862906e-03 2.225074e-308  3.597705e-03
#> [32,] -0.0040627333 0.09545027  2.676950e-19 2.225074e-308 2.225074e-308
#> [33,]  0.0043874577 0.06458439 2.225074e-308  8.708503e-13  2.819017e-02
#> [34,]  0.0053288706 0.08789843  2.530483e-03 2.225074e-308 2.225074e-308
#> [35,]  0.0117633962 0.09497367 2.225074e-308 2.225074e-308  1.511587e-02
#> [36,] -0.0069056267 0.08674653  2.641810e-03 2.225074e-308  1.655560e-18
#> [37,] -0.0025785811 0.09699263 2.225074e-308  4.788437e-18 2.225074e-308
#> [38,] -0.0031149565 0.07321513  8.533050e-03  2.244318e-18  1.548240e-02
#> [39,]  0.0045285273 0.07358491  2.150519e-03 2.225074e-308  2.151083e-02
#> [40,]  0.0017044353 0.09480787  5.870631e-04  5.536876e-03  1.204686e-03
```

```
#> [41,] -0.0015993244 0.08755920 2.225074e-308  6.742960e-03  1.205816e-02
#> [42,] -0.0052626343 0.10438286  4.728267e-12  6.917643e-12  2.726984e-12
#> [43,]  0.0064149050 0.09585076  7.282949e-14  1.625921e-13  2.132896e-13
#> [44,]  0.0035559973 0.09350684  2.089570e-03 2.225074e-308 2.225074e-308
#> [45,]  0.0038073345 0.09862954  6.369364e-18  1.229678e-17 2.225074e-308
#> [46,] -0.0019508104 0.08764144  6.380134e-17  1.457194e-16  2.143788e-16
#> [47,] -0.0028842907 0.09035394  5.549650e-03 2.225074e-308 2.225074e-308
#> [48,] -0.0052650226 0.09940166  1.354737e-18  1.091557e-02 2.225074e-308
#> [49,] -0.0089430922 0.03984091  2.159471e-01  5.934004e-02  6.195124e-02
#> [50,] -0.0034254828 0.09254811  9.407460e-04 2.225074e-308  1.583054e-03
#> Test passed
```

```
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   751.3197075867 41
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=751.31971 (started at 1269.463)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.7106986454947 3,0.464231686717646,-0.111021198793569,0.0028375017390776,0.627898473838755,0.426
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   799.929098809376
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=799.9291 (started at 1263.8017)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.677525023393436,0.500259459118053,-0.185206988544427,0.0283008376220949,0.633238150398795,0.470
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   846.126924675452
```

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

```
#>
#>  Solution found!   Final fit=846.12692 (started at 1283.4513)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.659549937384658,0.505094363716459,-0.121377882551958,0.0309365430929552,0.582060056239826,0.462
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   750.995506579154
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=750.99551 (started at 1280.9902)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.692283414294205,0.517692917929182,-0.103818191707354,0.00519528547782612,0.6275371777311779,0.44
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   749.079788124289
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=749.07979 (started at 1245.9536)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.648001909931465,0.484658810194989,-0.0827366492268269,0.0260652101363053,0.663959550155731,0.37
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   759.575316725861
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=759.57532 (started at 1248.7605)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.685833333457114,0.4839307422108 75,-0.0741864207819899,0.0321052262508275,0.568802615916586,0.4
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   797.857005940171
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=797.85701 (started at 1279.8614)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.726950358294461,0.530434299747253,-0.0762157630476543,0.0256326233612561,0.603860466655573,0.3
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   824.489515851079
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=824.48952 (started at 1289.1724)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.749008387912494,0.4865325479623,-0.179091855558883,-0.0187932972534965,0.620270639925025,0.395
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   729.933335460948
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=729.93334 (started at 1249.7777)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.655513850383702,0.501708513630742,-0.0273504357492864,-0.0655218426868497,0.636012896631613,0.3
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   845.526274930183
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=845.52627 (started at 1303.4348)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716500837903992,0.482524126651012,-0.167637170158677,-0.00119804171195254,0.621892337563127,0.4
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   796.50621914596
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=796.50622 (started at 1269.6943)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.70647591280896,0.47452908232935,-0.0857508433753885,-0.0128762774812567,0.634988351525998,0.411
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   833.620336510446
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=833.62034 (started at 1290.7195)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.747537328256099,0.517932442643959,-0.158627242603006,-0.0278830605781817,0.566354561911812,0.46
#> Running DTVAR with 21 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   706.628035023635
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=706.62804 (started at 1226.2001)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.760686080706454,0.486744276435673,-0.172908994558533,-0.0685360229968091,0.5737369417220052,0.35
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   771.756028431554
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=771.75603 (started at 1264.1231)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6171883738933688,0.5455375494777776,-0.1170115295155955,0.01415119691211515,0.6184793371593888,0.428
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   845.386465180075
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=845.38647 (started at 1293.5893)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.7171889630482556,0.4859415776201924,-0.01202697081441244,0.01620504526782255,0.6332234884119874,0.43
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
```

```
#>
#>  Lowest minimum so far:   857.992340234439
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=857.99234 (started at 1288.8022)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.614543154085107,0.488260314189693,-0.128076467895919,0.0179191485004408,0.631965601094014,0.40
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   757.947096196152
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=757.9471 (started at 1267.7093)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.667885492757398,0.453507424136578,-0.141449974707393,0.0773218445173619,0.626895039489207,0.39
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   943.363193760916
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=943.36319 (started at 1359.8388)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.792445186178132,0.534094787530707,-0.0791213287068012,-0.0502954305322449,0.601289497459956,0.
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   629.748761930309
```

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

```
#>
#>  Solution found!   Final fit=629.74876 (started at 1190.6779)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.690059428952813,0.465372163778792,-0.0881513971240068,-0.0184132978229806,0.623727579744606,0.3
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   685.977363678455
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=685.97736 (started at 1219.1617)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.684689216513845,0.530779820938 21,-0.0899770954335793,0.0192188053678879,0.617417429366734,0.41
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   699.293873053025
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=699.29387 (started at 1234.2618)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.695926986062555,0.4642401077778783,-0.0738082347647019,0.0450223362813558,0.6519997011127,0.396
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   742.366071045316
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=742.36607 (started at 1237.087)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.668070148241068,0.545882551731747,-0.0338980127715694,0.0206922963385754,0.573261133390169,0.38
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   828.704031058747
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=828.70403 (started at 1289.3303)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.64058962191421,0.522165210515044,-0.135820411759729,0.00877505639271599,0.60718681582487,0.3539
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   855.984992069113
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=855.98499 (started at 1304.0155)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.730870752974625,0.535905287462558,-0.115086089579368,-0.0797036746035043,0.578920862897764,0.43
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   773.715854937936
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=773.71585 (started at 1286.0687)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.821135333697308,0.566515678090674,-0.0930377738709663,-0.0736306359881156,0.545074767592981,0.
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   882.555537507049
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=882.55554 (started at 1307.0484)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.708978017422467,0.484454323716334,-0.081807363257902,0.0280336105260529,0.606310697259644,0.37
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   861.688059844513
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=861.68806 (started at 1294.3839)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.712279138897643,0.472005473399478,-0.0473023777622001,-0.00606867066065085,0.624794560570071,0
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   811.249677111109
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=811.24968 (started at 1271.1003)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.667835294544105,0.497259162668274,-0.102642947266515,0.0292085088684661,0.583428301421909,0.41
#> Running DTVAR with 21 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   718.013120776643
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=718.01312 (started at 1244.5256)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.776148211823108,0.477957541695793,-0.0808565004493837,-0.00116571525168234,0.619262628971791,0.
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   721.641929833934
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=721.64193 (started at 1239.4922)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.696022594818889,0.521310135016803,-0.143890739149134,0.0244572587738219,0.573546690618521,0.421
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   741.39284692364
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=741.39285 (started at 1249.6157)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.747334785005626,0.469596177715094,-0.146642713006986,-0.0278454950944348,0.60129131152121,0.418
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
```

```
#>
#>  Lowest minimum so far:   793.7527771312761
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=793.75277 (started at 1276.9744)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.676304210794201,0.501899198313944,-0.061534506383768,-0.0196665740703548,0.613320256741695,0.4
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   758.375935370701
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=758.37594 (started at 1244.8122)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.703601786871597,0.506819061415419,-0.0888938976151536,0.0283674538692156,0.596297788195982,0.3
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   745.480840265313
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=745.48084 (started at 1234.0191)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.665555667600061,0.520562110537304,-0.104399025910575,-0.0456535404433174,0.541193383302419,0.4
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   879.218985516669
```

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

```
#>
#>  Solution found!   Final fit=879.21899 (started at 1303.4446)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.659304023481272,0.510855892324908,-0.0951681393381338,-0.00304624480681451,0.570279860623274,0
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   713.767068665155
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=713.76707 (started at 1232.2381)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.623964453936726,0.538956002928939,-0.130977611048268,0.017951863296264,0.533324816655176,0.402
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   810.589877162374
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=810.58988 (started at 1295.8227)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.741352561272342,0.470302743499166,-0.088884132945029,-0.0378900180057025,0.653905749258198,0.37
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   805.718716602953
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=805.71872 (started at 1267.5692)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.732506389063239,0.428151628472143,-0.0534039015000662,-0.0350866476240597,0.627025855143325,0.3
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   805.880437088124
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=805.88044 (started at 1265.0377)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.649910112988786,0.400546429602534,-0.0483449325056152,-0.00821089073043356,0.662312876203614,0
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   749.639553147855
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=749.63955 (started at 1234.5385)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.663784000175815,0.528200098590094,-0.113204806482609,0.0261182524060055,0.5978119444206,0.38858
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   756.700563528364
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=756.70056 (started at 1246.4515)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.619092587846323,0.475220133846945,-0.136693721168661,0.0384367737270183,0.659557636803355,0.445
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   754.801122620338
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=754.80112 (started at 1278.0876)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.734460503713391,0.480515291227692,-0.0619197688420543,-0.0653749938964085,0.565140770356631,0.3
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   734.946620849727
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=734.94662 (started at 1237.5214)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.662330751392271,0.438945719827613,-0.0107646756274315,0.0111165653137849,0.591359423322529,0.32
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   777.291138049521
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=777.29114 (started at 1265.6089)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.700342993553798,0.497603144544497,-0.14926312175068,-0.0231170996195362,0.624888123860787,0.402
#> Running DTVAR with 21 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   793.282278075967
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=793.28228 (started at 1270.784)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.674660723993665,0.485613119893557,-0.0386786670502685,0.016723111411075,0.614962078510925,0.371
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   780.490732948571
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=780.49073 (started at 1297.8714)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716465033280017,0.559307878156324,-0.124313321871067,-0.0422768361211832,0.563292385471103,0.42
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   744.6847937727967
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=744.68479 (started at 1265.077)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.683502865521012,0.557644038664126,-0.099904047683449,-0.00802100389815989,0.608660872759096,0.4
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
```

```
#>
#>  Lowest minimum so far:   802.891504569568
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=802.8915 (started at 1274.2474)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.713084498923792,0.470303050901234,-0.195226011805362,-0.0290644297460201,0.629366565022843,0.43
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   755.443921030994
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=755.44392 (started at 1270.7289)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.769621655336331,0.517578579271514,-0.0764540640167939,-0.0410293163001203,0.583370261666564,0.3
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   835.124892149278
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=835.12489 (started at 1312.6182)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.749524952387577,0.535967263977122,-0.102502126696489,-0.0499275302789386,0.596349763003596,0.39

#> Test passed

#> test-external-fitDTVARMx-fit-dt-var-id-mx-psi-full
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
```

```
#>
#>  Lowest minimum so far:   753.5257324525 72
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=753.52573 (started at 2818.8767)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716436415222463,0.46120650759993,-0.11106142200985,0.00301321978625175,0.627903247442089,0.426
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   807.021890855762
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=807.02189 (started at 2588.505)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.64436683061265,0.498391235104444,-0.160071888486509,0.0339781657775154,0.60198005547183,0.4384
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   847.919053227647
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=847.91905 (started at 2728.4921)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.65048263248784,0.500831062221385,-0.118198402919168,0.0366494280228962,0.58123942241134,0.4561
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   756.955676893351
```

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

```
#>
#>  Solution found!   Final fit=756.95568 (started at 2854.9595)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6942371147666277,0.50819717974084,-0.105624421687433,0.00409527101758858,0.632289504573856,0.450
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   753.509193083176
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=753.50919 (started at 2812.8936)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6558872406673 05,0.485802860899086,-0.0839083092806684,0.0298198753046307,0.656184253710193,0.38
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   767.581208584653
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=767.58121 (started at 2522.5355)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.666099793161308,0.464511193536335,-0.0654932498099493,0.0379995747637649,0.576481640152402,0.40
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   804.159589781432
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=804.15959 (started at 3214.4662)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.709514848929937,0.512520781234585,-0.0693268366569042,0.0311394034558585,0.614375945693731,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   827.0353512777773
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=827.03535 (started at 3126.4497)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.733415048380763,0.4737216740935777,-0.1732197017387781,-0.0107016860315689,0.62558581948988,0.40
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   743.339437745895
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=743.33944 (started at 2638.9239)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.668500573495145,0.511018607197798,-0.0225538430528102,-0.05542785778715911,0.637549001451148,0.38
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   847.085842605281
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=847.08584 (started at 3004.5656)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.718837735013316,0.482253589501059,-0.169234127921267,-0.00206947265127682,0.619615644295509,0.
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   798.182952340646
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=798.18295 (started at 2962.9231)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.708600488635298,0.475389955511965,-0.085460390696434,-0.0141914891723086,0.629366355717873,0.
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   840.239359125614
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=840.23936 (started at 3098.1221)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.720830754402489,0.499539299020777,-0.149811076907913,-0.00935615157185998,0.57422226258662,0.45
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   715.463286815621
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=715.46329 (started at 2186.5411)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.677912107269737,0.431604681250001,-0.166117198698995,-0.0373722186506209,0.594714237261924,0.30
#> Running DTVAR with 15 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   773.555575512671
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=773.55558 (started at 2675.0592)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6100264830674 57,0.539202698808136,-0.112586142930668,0.0157509584879128,0.616348520468888,0.423
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   846.578790751943
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=846.57879 (started at 3142.1671)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.691847872543022,0.471764713770405,-0.0106546517322897,0.0247164502125093,0.633220346398059,0.43
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   868.348041529059
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=868.34804 (started at 2583.8942)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.627985457429941,0.503361278558891,-0.108089115420085,0.0108907733533732,0.592087680278419,0.384
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
```

```
#>
#>  Lowest minimum so far:   760.668650750947
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=760.66865 (started at 2962.0687)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.671043139022586,0.449739528055455,-0.143364823394739,0.0767812397406271,0.627634905926179,0.396
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   954.419320076265
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=954.41932 (started at 3332.8123)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.740161996231148,0.486350529941446,-0.0719905629569747,-0.0344391039770904,0.623586895835233,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   631.565117226824
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=631.56512 (started at 2223.8663)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.690188935998514,0.46631844387648,-0.08801566889008,-0.0170043240574745,0.624407579707965,0.3692
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   692.702283448668
```

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

```
#>
#>  Solution found!   Final fit=692.70228 (started at 2880.1989)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.674492124834447,0.531806331376248,-0.083841640629154 3,0.0241935696660206,0.605847465804013,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   704.124614432298
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=704.12461 (started at 2831.2135)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.696273796344007,0.470563205711438,-0.0677463248382287,0.0442441501587756,0.64126111655224,0.381
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   749.064871857215
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=749.06487 (started at 2617.189)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.671672105348793,0.553224070750836,-0.0308282180059454,0.0280177530695161,0.57610156309409,0.386
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   832.957215375091
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=832.95722 (started at 2874.4152)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.640599838610924,0.521866124273361,-0.133801927044219,0.00877052889399715,0.607560237452203,0.35
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   861.171646513974
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=861.17165 (started at 2735.9084)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.7024466110502,0.5272794367298 65,-0.102937783074649,-0.0648383829981922,0.566048462881202,0.4156
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   780.388083990028
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=780.38808 (started at 2818.3029)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.750987741270986,0.515568653282166,-0.0858124045863997,-0.0423866391199023,0.565212590395853,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   884.012316186116
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=884.01232 (started at 3108.7275)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.711890555962314,0.492712094353095,-0.0767053671867543,0.0285288982660841,0.592178836717682,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   868.880098517359
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=868.8801 (started at 2947.4234)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.717163956726484,0.483683749390108,-0.0375993797690415,-0.00791624593376094,0.592678138445908,0
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   819.454253444935
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=819.45425 (started at 2726.9105)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.671410883778628,0.495828161311923,-0.106347033551363,0.0223727917334639,0.58429337083662,0.439
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   724.034733274749
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=724.03473 (started at 2991.6161)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.764140813406795,0.470038494719864,-0.0801097134386043,-0.000442425651481679,0.623075886406732,
#> Running DTVAR with 15 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   725.079200154439
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=725.0792 (started at 2487.1488)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.697998788962474,0.540332218461876,-0.130730262718038,0.021917093189631,0.536314938739927,0.397
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   741.942718148694
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=741.94272 (started at 2694.1576)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.731765713657343,0.460947222135443,-0.143515721061055,-0.0217064859033288,0.604955165279216,0.42
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   796.39568167447
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=796.39568 (started at 2668.9238)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.676185407326791,0.501506271339295,-0.061736611790433 4,-0.019148788989216,0.614634619994129,0.40
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
```

```
#>
#>  Lowest minimum so far:   769.931496604577
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=769.9315 (started at 2648.519)  (1 attempt(s):  1 valid,
0 errors)
#>  Start values from best fit:
#> 0.706889471784751,0.5109586747922O9,-0.0872903329879598,0.0314618509851111,0.601647569105036,0.38
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   747.156022212034
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=747.15602 (started at 2244.6977)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.654001704960002,0.510864453765444,-0.101153642056875,-0.0416413960636243,0.545366507859859,0.39
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   882.881817268468
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=882.88182 (started at 2694.2373)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.664263573300725,0.510259310240862,-0.101706055736383,-0.00135421886135303,0.569389311889082,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   719.294592452257
```

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

```
#>
#>  Solution found!   Final fit=719.29459 (started at 2203.3335)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.611369817670824,0.524445199031561,-0.124102198479103,0.0219054133021689,0.542066359773609,0.395
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   811.165066118919
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=811.16507 (started at 3110.0582)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.741715278223738,0.469386839421521,-0.087911341498182,-0.0380941832178262,0.654375832276698,0.37
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   811.70332993416
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=811.70333 (started at 2666.7364)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.693236961960978,0.409760379952362,-0.0515540037282645,-0.0206192926676925,0.635629426358448,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   815.700637309489
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=815.70064 (started at 2295.3086)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.643558774321743,0.397803453713946,-0.0391462779462435,-0.00811994515678317,0.662033654346106,0.
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   751.628548117406
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=751.62855 (started at 2484.7537)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6640940579773 61,0.531039768082628,-0.106946643085385,0.0260204915877746,0.584316984862053,0.378
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   765.695649763963
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=765.69565 (started at 2540.8022)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.624782040432687,0.480391243558771,-0.141774241220355,0.0410356454946573,0.63419734217564,0.4442
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   765.506906141828
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=765.50691 (started at 2411.4559)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.744362247730579,0.466000664481607,-0.069349338007458,-0.0676861693133684,0.568591816257574,0.35
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   738.535430579731
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=738.53543 (started at 2324.9388)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.662192005125345,0.438486701827505,-0.0111805116228224,0.0119839705264638,0.594386140604135,0.32
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   779.219889369411
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=779.21989 (started at 2722.6984)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.69034389691048,0.490260318654998,-0.14634594417869,-0.0195661764759828,0.627471517944632,0.4030
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   797.337555445124
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=797.33756 (started at 2724.6975)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.679540559837914,0.477660142813054,-0.0378213601801239,0.0155174575977354,0.616832717935434,0.37
#> Running DTVAR with 15 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   786.461409258482
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=786.46141 (started at 2825.0508)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716083270816913,0.554192922595806,-0.123048503581535,-0.0417163648361636,0.571856335180358,0.42
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   750.491237693379
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=750.49124 (started at 2890.0689)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.661258618775645,0.532531164387958,-0.101653621291143,0.00194807267016532,0.614525197221424,0.39
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   807.229141174741
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=807.22914 (started at 2653.0473)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.711543203628796,0.486743640658324,-0.182172323758709,-0.0261170676048986,0.599277356957442,0.40
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
```

```
#>
#>  Lowest minimum so far:   762.74606543844
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=762.74607 (started at 3168.4061)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.771335696115137,0.515804519283412,-0.0882914931561921,-0.0395714777150414,0.579340252513826,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   837.387110472529
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=837.38711 (started at 3078.7657)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.746062168737616,0.531524328374897,-0.100212184075212,-0.0484581160708526,0.598238209677157,0.39

#>
#> Means of the estimated paramaters per individual.
#>       beta_11       beta_21       beta_31       beta_12       beta_22
#>  0.6898007437  0.4925039116 -0.0971630850 -0.0011438727  0.6039699649
#>       beta_32       beta_13       beta_23       beta_33        psi_11
#>  0.4004223761 -0.0075819435 -0.0045310302  0.5021902470  0.0996194338
#>        psi_21        psi_22        psi_31        psi_32        psi_33
#> -0.0006327305  0.0976294060  0.0008212469  0.0000440513  0.0995392403
#>
#> Estimated paramaters per individual.
#>         beta_11   beta_21     beta_31       beta_12   beta_22   beta_32
#>  [1,] 0.7164364 0.4612065 -0.11106142  0.0030132198 0.6279032 0.4260547
#>  [2,] 0.6443668 0.4983912 -0.16007189  0.0339781658 0.6019801 0.4384784
#>  [3,] 0.6504826 0.5008311 -0.11819840  0.0366494280 0.5812394 0.4561127
#>  [4,] 0.6942371 0.5081972 -0.10562442  0.0040952710 0.6322895 0.4502003
#>  [5,] 0.6558872 0.4858029 -0.08390831  0.0298198753 0.6561843 0.3855365
#>  [6,] 0.6660998 0.4645112 -0.06549325  0.0379995748 0.5764816 0.4011554
#>  [7,] 0.7095148 0.5125208 -0.06932684  0.0311394035 0.6143759 0.3797664
#>  [8,] 0.7334150 0.4737217 -0.17321970 -0.0107016860 0.6255858 0.4003599
#>  [9,] 0.6685006 0.5110186 -0.02255384 -0.0554278578 0.6375490 0.3821291
#> [10,] 0.7188377 0.4822536 -0.16923413 -0.0020694727 0.6196156 0.4347279
```

```
#> [11,] 0.7086005 0.4753900 -0.08546040 -0.0141914892 0.6293664 0.4134233
#> [12,] 0.7208308 0.4995393 -0.14981108 -0.0093561516 0.5742223 0.4583406
#> [13,] 0.6779121 0.4316047 -0.16611720 -0.0373722187 0.5947142 0.3641520
#> [14,] 0.6100265 0.5392027 -0.11258614  0.0157509585 0.6163485 0.4239194
#> [15,] 0.6918479 0.4717647 -0.01065465  0.0247164502 0.6332203 0.4387663
#> [16,] 0.6279855 0.5033613 -0.10808912  0.0108907734 0.5920877 0.3841643
#> [17,] 0.6710431 0.4497395 -0.14336482  0.0767812397 0.6276349 0.3967675
#> [18,] 0.7401620 0.4863505 -0.07199056 -0.0344391040 0.6235869 0.4097467
#> [19,] 0.6901889 0.4663184 -0.08801567 -0.0170043241 0.6244076 0.3692751
#> [20,] 0.6744921 0.5318063 -0.08384164  0.0241935697 0.6058475 0.4025678
#> [21,] 0.6962738 0.4705632 -0.06774632  0.0442441502 0.6412611 0.3818915
#> [22,] 0.6716721 0.5532241 -0.03082822  0.0280177531 0.5761016 0.3862488
#> [23,] 0.6405998 0.5218661 -0.13380193  0.0087705289 0.6075602 0.3510438
#> [24,] 0.7024466 0.5272794 -0.10293778 -0.0648383830 0.5660485 0.4156523
#> [25,] 0.7509877 0.5155687 -0.08581240 -0.0423866391 0.5652126 0.4566625
#> [26,] 0.7118906 0.4927121 -0.07670537  0.0285288983 0.5921788 0.3655774
#> [27,] 0.7171640 0.4836837 -0.03759938 -0.0079162459 0.5926781 0.3703563
#> [28,] 0.6714109 0.4958282 -0.10634703  0.0223727917 0.5842934 0.4399728
#> [29,] 0.7641408 0.4700385 -0.08010971 -0.0004424257 0.6230759 0.3746318
#> [30,] 0.6979988 0.5403322 -0.13073026  0.0219170932 0.5363149 0.3970800
#> [31,] 0.7317657 0.4609472 -0.14351572 -0.0217064859 0.6049552 0.4208590
#> [32,] 0.6761854 0.5015063 -0.06173661 -0.0191487890 0.6146346 0.4065042
#> [33,] 0.7068895 0.5109587 -0.08729033  0.0314618510 0.6016476 0.3810877
#> [34,] 0.6540017 0.5108645 -0.10115364 -0.0416413961 0.5453665 0.3990613
#> [35,] 0.6642636 0.5102593 -0.10170606 -0.0013542189 0.5693893 0.4202822
#> [36,] 0.6113698 0.5244452 -0.12410220  0.0219054133 0.5420664 0.3953144
#> [37,] 0.7417153 0.4693868 -0.08791134 -0.0380941832 0.6543758 0.3749483
#> [38,] 0.6932370 0.4097604 -0.05155400 -0.0206192927 0.6356294 0.4060947
#> [39,] 0.6435588 0.3978035 -0.03914628 -0.0081199452 0.6620337 0.3879407
#> [40,] 0.6640941 0.5310398 -0.10694664  0.0260204916 0.5843170 0.3782273
#> [41,] 0.6247820 0.4803912 -0.14177424  0.0410356455 0.6341973 0.4442988
#> [42,] 0.7443622 0.4660007 -0.06934934 -0.0676861693 0.5685918 0.3591634
#> [43,] 0.6621920 0.4384867 -0.01118051  0.0119839705 0.5943861 0.3289311
#> [44,] 0.6903439 0.4902603 -0.14634594 -0.0195661765 0.6274715 0.4030392
#> [45,] 0.6795406 0.4776601 -0.03782136  0.0155174576 0.6168327 0.3708302
#> [46,] 0.7160833 0.5541929 -0.12304850 -0.0417163648 0.5718563 0.4239435
#> [47,] 0.6612586 0.5325312 -0.10165362  0.0019480727 0.6145252 0.3988160
#> [48,] 0.7115432 0.4867436 -0.18217232 -0.0261170676 0.5992774 0.4082673
#> [49,] 0.7713357 0.5158045 -0.08829149 -0.0395714777 0.5793403 0.3684535
#> [50,] 0.7460622 0.5315243 -0.10021218 -0.0484581161 0.5982382 0.3902948
#>             beta_13      beta_23   beta_33     psi_11        psi_21     psi_22
#>  [1,]  3.767697e-02 -0.016204291 0.4934635 0.09236430 -5.324830e-03 0.10441801
#>  [2,] -2.872351e-02 -0.040669271 0.5060105 0.09910348 -4.839675e-03 0.09980915
#>  [3,]  3.405298e-02  0.009652858 0.4132409 0.10951737 -6.675289e-03 0.09971272
#>  [4,] -5.203833e-02 -0.030030153 0.5082030 0.08988989 -5.041940e-03 0.10354652
```

```
#>  [5,]  3.987900e-02 -0.069525753 0.4829400 0.10637641 -5.572233e-04 0.08962838
#>  [6,] -3.839097e-02  0.062884362 0.5273113 0.08918807 -1.820319e-05 0.09646983
#>  [7,] -1.063964e-03  0.001453334 0.5320950 0.09379551 -3.607323e-03 0.10741077
#>  [8,]  4.173004e-02 -0.002281139 0.4890153 0.10670325 -1.421036e-03 0.09517610
#>  [9,]  1.638226e-02  0.025803770 0.5040052 0.09349177 -3.119346e-03 0.10123607
#> [10,] -3.137786e-02 -0.055707822 0.4925917 0.10216933  7.655422e-03 0.10046565
#> [11,] -1.377863e-02  0.025876537 0.4755917 0.10501062  1.158445e-03 0.09658692
#> [12,] -1.759180e-02  0.062908478 0.4615750 0.10523754 -5.464364e-04 0.10042699
#> [13,] -1.748852e-02 -0.028191949 0.5579194 0.09167820  1.933323e-03 0.09960262
#> [14,]  3.285214e-02  0.025160688 0.4843841 0.09207275 -3.849231e-03 0.10111171
#> [15,] -2.533831e-02 -0.001524300 0.4602079 0.10874180 -5.909766e-03 0.09305121
#> [16,] -2.801120e-02  0.049243284 0.4904431 0.10455334  4.423812e-03 0.10199664
#> [17,] -8.772067e-02 -0.020082801 0.5466429 0.10584997  5.301802e-03 0.09201540
#> [18,] -2.277969e-02  0.033246178 0.4691238 0.10707271 -5.938645e-03 0.11476416
#> [19,]  1.314066e-02 -0.047159259 0.5118008 0.09151968  1.031570e-03 0.09404747
#> [20,] -1.262363e-02  0.009575572 0.5180091 0.09688292  4.260929e-03 0.08237908
#> [21,] -6.806730e-02  0.007690492 0.5273935 0.09145263 -1.031339e-04 0.09281790
#> [22,] -5.070726e-03 -0.016034355 0.4827573 0.09231043 -3.517581e-04 0.09540341
#> [23,]  2.644198e-02  0.012001024 0.5436497 0.10146299  1.845942e-03 0.09874497
#> [24,]  3.302488e-02  0.014010290 0.4982277 0.09195172  4.055745e-03 0.10077893
#> [25,] -1.816159e-02 -0.012839078 0.5156156 0.09534863 -5.429376e-03 0.08987712
#> [26,] -1.452060e-02  0.011014897 0.4993528 0.10674107  1.160667e-03 0.10483254
#> [27,] -9.511458e-03 -0.023160094 0.4976261 0.10480690  3.903838e-03 0.09544870
#> [28,] -4.862278e-02  0.044441367 0.4338248 0.10756082 -7.246280e-03 0.09402862
#> [29,] -1.287303e-02 -0.027105369 0.4925640 0.09613404 -5.579647e-03 0.09415167
#> [30,] -6.325750e-02 -0.030463659 0.5275478 0.09851222 -3.979785e-03 0.09147849
#> [31,]  2.379986e-02  0.008532113 0.5415247 0.08655529  1.347554e-03 0.09611717
#> [32,] -3.660551e-02 -0.017179644 0.5213864 0.10598629 -7.850747e-04 0.09532712
#> [33,] -5.550692e-03 -0.041329839 0.4505242 0.08773422  3.068739e-03 0.10669765
#> [34,]  1.202316e-02  0.055600553 0.5006344 0.09814807 -6.004034e-04 0.10249907
#> [35,]  2.521697e-02 -0.014375849 0.4951182 0.10578196  1.596459e-03 0.09757368
#> [36,] -7.823364e-02 -0.027401713 0.5618894 0.09510155  5.539316e-03 0.10233543
#> [37,]  5.954054e-02 -0.071729192 0.5051130 0.10569100  3.398301e-03 0.09819851
#> [38,]  8.130202e-04 -0.016622985 0.5259746 0.10722714  3.868623e-03 0.10136353
#> [39,]  2.504298e-03 -0.048829541 0.5051328 0.10181509 -9.016570e-03 0.09813541
#> [40,] -2.169278e-04 -0.026099297 0.4682647 0.09969267 -2.185865e-03 0.09250838
#> [41,] -2.016459e-02 -0.033360501 0.5045003 0.09472779 -1.687858e-03 0.09315176
#> [42,]  1.180118e-02  0.005718668 0.5118082 0.10172840 -2.014653e-03 0.08670699
#> [43,]  3.138052e-05  0.028027213 0.5422930 0.09650774  1.193453e-03 0.09456342
#> [44,] -2.434814e-02  0.023305080 0.4699409 0.09555989  4.003601e-03 0.10527463
#> [45,] -2.288984e-02  0.003217837 0.5064651 0.09935752 -1.207914e-03 0.10017945
#> [46,] -2.439583e-03 -0.016344804 0.4737853 0.10989407 -1.168023e-03 0.09951815
#> [47,]  5.894255e-04 -0.003110227 0.5597479 0.09812825  3.658965e-04 0.09974558
#> [48,] -1.492982e-02  0.022724487 0.4872601 0.10268231 -9.089998e-04 0.09593580
#> [49,]  1.104496e-02  0.015681110 0.5219298 0.10659368 -3.171437e-03 0.07986121
```

```
#> [50,]  2.074791e-02 -0.046958816 0.5130859 0.10455844 -4.642441e-04 0.10435961
#>              psi_31        psi_32     psi_33
#>  [1,] -0.0021463558 -0.0088011834 0.09418130
#>  [2,] -0.0014442290  0.0077596439 0.10212466
#>  [3,] -0.0026784932 -0.0037866751 0.09869632
#>  [4,] -0.0018578044 -0.0028164232 0.09764930
#>  [5,] -0.0058674176  0.0002278772 0.09469583
#>  [6,] -0.0007042135 -0.0023088851 0.10745221
#>  [7,]  0.0064558798 -0.0037245023 0.09953847
#>  [8,]  0.0032891894  0.0050110704 0.10174310
#>  [9,] -0.0018192156 -0.0060369874 0.09240957
#> [10,] -0.0055409377  0.0002450586 0.10672365
#> [11,]  0.0025520178  0.0036732507 0.09725205
#> [12,] -0.0021385718  0.0005309279 0.09981885
#> [13,] -0.0017426385  0.0069387335 0.09100240
#> [14,] -0.0074369509  0.0073826085 0.10158569
#> [15,]  0.0016027355  0.0067361320 0.10701686
#> [16,] -0.0079141130 -0.0027820685 0.10707305
#> [17,] -0.0061938324 -0.0021965503 0.09419250
#> [18,]  0.0069481621 -0.0012486509 0.10858823
#> [19,]  0.0036193682  0.0028552125 0.08204393
#> [20,] -0.0009781842  0.0026071111 0.09978935
#> [21,]  0.0064237519 -0.0014649015 0.09564751
#> [22,]  0.0034526429 -0.0043854047 0.10075103
#> [23,]  0.0038174456  0.0002121122 0.10415490
#> [24,]  0.0005573121  0.0052825268 0.11962095
#> [25,]  0.0016014525  0.0009255928 0.11049136
#> [26,]  0.0010809400 -0.0052695220 0.10397592
#> [27,]  0.0047377152 -0.0017411882 0.10981647
#> [28,]  0.0044020230  0.0061089376 0.10193901
#> [29,]  0.0022538644 -0.0108791659 0.09188835
#> [30,]  0.0027830565  0.0001271008 0.09455050
#> [31,]  0.0034648292  0.0027521565 0.10603945
#> [32,]  0.0022701657 -0.0038702562 0.09555485
#> [33,]  0.0012162698  0.0031643327 0.09956649
#> [34,]  0.0036515532  0.0050171943 0.08812314
#> [35,]  0.0045110661  0.0116123050 0.11412901
#> [36,] -0.0053902979 -0.0075853892 0.08746564
#> [37,]  0.0003215657 -0.0026306237 0.09704915
#> [38,]  0.0065080786 -0.0033976361 0.09373907
#> [39,]  0.0013130338  0.0037380645 0.10162336
#> [40,] -0.0014765759  0.0029318796 0.09729517
#> [41,]  0.0026529008  0.0003497434 0.10441327
#> [42,]  0.0063249515 -0.0047025816 0.10469152
#> [43,]  0.0014227001  0.0067586005 0.09616522
```

```
#> [44,] -0.0017902739  0.0034844365 0.09386252
#> [45,]  0.0040924343  0.0037465640 0.09863589
#> [46,] -0.0020777539 -0.0022109274 0.08770676
#> [47,] -0.0015252829 -0.0028853562 0.09096315
#> [48,] -0.0003707934 -0.0028027936 0.10178054
#> [49,]  0.0061182969 -0.0066335574 0.10693411
#> [50,]  0.0027108800 -0.0038153787 0.09481041
#> Test passed
```

```
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   753.525732452556
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=753.52573 (started at 767.23983)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716436390682026,0.461206479455504,-0.111061379787523,0.0030132264079104,0.627903218328769,0.42
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   807.021890855755
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=807.02189 (started at 819.93175)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.644366793188742,0.498391198593837,-0.160071888293784,0.0339782105103452,0.601980079409444,0.43
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   847.919053227644
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=847.91905 (started at 866.15931)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.650482647114877,0.500831083597165,-0.118198399837826,0.0366494412099027,0.58123941401327,0.456
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   756.955676893345
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=756.95568 (started at 772.80857)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.694237162178642,0.508197186581156,-0.105624427881956,0.0040952688312779,0.632289505046,0.450200
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   753.509193083072
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=753.50919 (started at 771.21109)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.65588724488325,0.485802960120283,-0.0839084007874325,0.0298198891170515,0.656184258707664,0.385
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   767.58120858461
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=767.58121 (started at 783.11641)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.666099887014264,0.464511128130109,-0.0654932201853335,0.0379995404285138,0.57648173062466,0.401
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   804.159589781426
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=804.15959 (started at 815.15868)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.70951485881902,0.512520816663012,-0.0693267786022447,0.0311394047336333,0.614375939678389,0.379
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   827.035351277667
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=827.03535 (started at 841.57206)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.733415043702801,0.473721546842199,-0.173219833196819,-0.0107016991520161,0.625585842241969,0.40
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   743.339437745896
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=743.33944 (started at 764.8049)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.668500572085409,0.511018622072907,-0.0225538370995188,-0.0554278644766949,0.637548988926908,0.3
#> Running DTVAR with 15 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   847.085842605272
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=847.08584 (started at 861.62867)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.718837721855379,0.482253548068668,-0.169234124031418,-0.00206947278182343,0.619615680888378,0.
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   798.182952340645
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=798.18295 (started at 805.58759)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.708600485096219,0.475389970974243,-0.085460402431063 4,-0.0141914833941467,0.629366341929125,0.
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   840.239359125587
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=840.23936 (started at 851.00179)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.720830653827444,0.499539260138973,-0.149811068950961,-0.00935609960920493,0.57422230687676,0.45
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
```

```
#>
#>  Lowest minimum so far:   715.463286815619
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=715.46329 (started at 741.63598)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.677912113042656,0.431604678276107,-0.166117191309574,-0.03737222077755388,0.59471424284018,0.364
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   773.5555751267 12
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=773.55558 (started at 793.31737)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.610026453855919,0.539202693508786,-0.112586162753446,0.0157509527099102,0.616348515146169,0.423
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   846.5787907518 75
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=846.57879 (started at 870.41089)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.691847754051944,0.471764624088465,-0.0106547352992652,0.0247164077337403,0.633220378999821,0.43
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   868.348041529014
```

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

```
#>
#>  Solution found!   Final fit=868.34804 (started at 882.368)  (1 attempt(s):  1 valid,
0 errors)
#>  Start values from best fit:
#> 0.627985431859083,0.503361113879496,-0.108089109362885,0.0108907849576918,0.592087668353899,0.38
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   760.668650750786
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=760.66865 (started at 784.80812)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.671043294553344,0.449739610191639,-0.143364882616331,0.0767811422573739,0.627634877009767,0.39
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   954.419320076268
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=954.41932 (started at 976.21158)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.740161982974225,0.486350533145574,-0.0719905732255367,-0.0344391023992019,0.623586898319844,0.
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   631.565117226805
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=631.56512 (started at 649.09008)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.690188912052465,0.466318339589718,-0.0880157258698881,-0.0170043389544778,0.624407608247188,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   692.702283448623
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=692.70228 (started at 706.63832)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.674492176718318,0.531806306850468,-0.083841594038027,0.0241936143699129,0.605847520082124,0.402
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   704.124614432279
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=704.12461 (started at 719.7453)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.696273761145531,0.470563186562225,-0.067746332018030 4,0.0442441930269252,0.641261156621913,0.38
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   749.064871857162
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=749.06487 (started at 759.7683)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.6716720576288 69,0.553224033210853,-0.0308282016035504,0.0280177441410609,0.57610155566919,0.38
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   832.957215375085
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=832.95722 (started at 845.53725)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.640599852435438,0.521866132269368,-0.133801902986809,0.0087705541384 6116,0.607560239317985,0.35
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   861.171646513923
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=861.17165 (started at 880.21941)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.702446773174686,0.527279414132156,-0.102937825492937,-0.0648384230982519,0.566048491953186,0.41
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   780.388083990028
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=780.38808 (started at 802.16016)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.750987754707508,0.515568660401431,-0.0858123984972097,-0.0423866507955996,0.565212588448283,0.4
#> Running DTVAR with 15 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   884.012316186061
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=884.01232 (started at 891.24522)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.711890626125587,0.492712171335319,-0.0767053662610936,0.0285288078409419,0.592178738172141,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   868.880098517314
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=868.8801 (started at 879.61589)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.71716396593145,0.48368365260687,-0.0375995049545879,-0.00791630490751933,0.592678156135992,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   819.454253444913
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=819.45425 (started at 836.69057)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.671410923781904,0.495828176881161,-0.106347089887858,0.0223726872079972,0.58429337314242,0.439
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
```

```
#>
#>  Lowest minimum so far:   724.03473327474
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=724.03473 (started at 743.57505)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.764140816904933,0.470038558540764,-0.0801097355457075,-0.000442437695724619,0.623075863070390
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   725.079200154421
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=725.0792 (started at 742.41338)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.697998901485675,0.540332228962624,-0.13073017842312,0.0219170433366418,0.536314923021703,0.3970
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   741.942718148673
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=741.94272 (started at 756.40648)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.731765756698328,0.460947242378166,-0.143515722898899,-0.0217064958063703,0.604955154833140,0.420
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   796.395681674471
```

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

```
#>
#>  Solution found!   Final fit=796.39568 (started at 806.83396)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.676185418118704,0.501506267894337,-0.0617366079373675,-0.019148785246656,0.614634622254953,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   769.931496604557
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=769.9315 (started at 784.17806)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.706889523738641,0.510958751213881,-0.0872903029555143,0.0314618440317098,0.601647603879526,0.38
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   747.156022212031
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=747.15602 (started at 762.66042)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.654001707396025,0.510864481151734,-0.101153647245839,-0.041641397487621,0.54536651804121,0.3990
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   882.88181726846
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=882.88182 (started at 899.62257)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.664263630752343,0.510259320356062,-0.101706066044697,-0.00135424081986313,0.56938933434984,0.42
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   719.294592452244
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=719.29459 (started at 751.84398)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.611369834006924,0.524445251342304,-0.124102221494647,0.0219054135945505,0.542066330904429,0.395
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   811.165066118911
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=811.16507 (started at 825.67386)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.741715338593877,0.469386888597785,-0.0879113501672059,-0.038094210593080 4,0.654375787937546,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   811.703329934087
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=811.70333 (started at 829.66831)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.693236804904483,0.409760407814236,-0.051554137583411,-0.020619362685974,0.635629448221496,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   815.700637309486
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=815.70064 (started at 838.4595)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.643558786845639,0.397803426472942,-0.0391462577470995,-0.00811991823502146,0.662033636068717,0
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   751.628548117381
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=751.62855 (started at 760.05983)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.664094116312167,0.53103976530966,-0.106946597515043,0.0260203877281854,0.584316966099768,0.3782
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   765.695649763953
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=765.69565 (started at 777.65895)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.624782027530613,0.480391224437227,-0.141774212466561,0.041035703108846 1,0.634197385167903,0.44
#> Running DTVAR with 15 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   765.506906141818
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=765.50691 (started at 784.45062)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.7443622607179 56,0.46600071768367,-0.0693493469896016,-0.0676862012782647,0.568591816185557,0.35
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   738.5354305797 09
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=738.53543 (started at 755.42182)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.662192044590318,0.438486719931676,-0.011180434682371,0.0119838904048929,0.594386115716456,0.328
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   779.219889369408
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=779.21989 (started at 791.00989)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.690343893329731,0.490260337520905,-0.146345936445548,-0.0195661690359057,0.627471528541765,0.40
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
```

```
#>
#>  Lowest minimum so far:   797.337555444837
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=797.33756 (started at 803.52761)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.679540698246817,0.477660220092071,-0.037821410970492 5,0.0155172854832644,0.61683286487842,0.370
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   786.46140925848
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=786.46141 (started at 800.57952)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716083293302515,0.55419292826518,-0.123048540046494,-0.0417163759299722,0.57185633793225,0.4239
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   750.491237693354
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=750.49124 (started at 761.5739)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.661258571859748,0.532531156388684,-0.1016535905083,0.00194805149038873,0.614525235014744,0.3988
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   807.22914117474
```

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

```
#>
#>  Solution found!   Final fit=807.22914 (started at 816.98743)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.711543187543978,0.486743654967196,-0.182172327782474,-0.0261170698772137,0.599277367182826,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   762.746065438398
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=762.74607 (started at 787.98087)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.7713357927142 79,0.51580457063815,-0.0882914532265591,-0.0395715578177108,0.579340197688663,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   837.387110472529
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=837.38711 (started at 847.96006)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.746062141684281,0.531524331744801,-0.100212171784246,-0.0484581074240736,0.598238213495439,0.3
```

```
#> Test passed
```

```
#> test-external-fitDTVARMx-fit-dt-var-id-mx-theta-diag
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   759.332723034262
```

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

```
#>
#>  Solution found!   Final fit=759.33272 (started at 2229.3757)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716461575521197,0.461130100802105,-0.111058090094956,0.00301995673602239,0.627962413370496,0.42
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   806.575163455545
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=806.57516 (started at 2098.6642)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.64204086278048,0.467879985082402,-0.179936123375178,0.038191035386491,0.651193254454728,0.47331
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   851.056191919859
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=851.05619 (started at 2172.2392)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.65080426396324,0.500936247320838,-0.117869947772502,0.0358583652591551,0.581033122377913,0.4552
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   758.921960412823
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=758.92196 (started at 2247.5487)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.694145746890428,0.508146637865246,-0.105080329959906,0.00427982530120859,0.632528531337436,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   753.7733697383 72
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=753.77337 (started at 2226.3377)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.655842218231035,0.483039013437021,-0.0853657740340181,0.0286605704501393,0.663899896562032,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   767.578383629611
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=767.57838 (started at 2066.7412)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.684743384462473,0.477525888169968,-0.0652716256732445,0.0313005875194642,0.571829423136666,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   807.284247508601
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=807.28425 (started at 2447.0804)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.709501718839496,0.51250236281866,-0.0675568142351002,0.030951783780733,0.614126445007679,0.372
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   828.417185355633
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=828.41719 (started at 2396.895)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.73341404846121,0.470583172154503,-0.17297954570673,-0.0109162468529593,0.630609457212824,0.396
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   745.584294111448
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=745.58429 (started at 2129.414)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.668377704959284,0.51147490422647,-0.0202885525399023,-0.055357002601867,0.637384733444228,0.373
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   850.925330776681
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=850.92533 (started at 2328.0718)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.7299721578150 89,0.490432428487342,-0.17046779276472,-0.00613817974515806,0.618063077674825,0.43
#> Running DTVAR with 15 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   798.45111927568
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=798.45112 (started at 2308.0631)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.708648962619358,0.470937490235225,-0.0862511076813548,-0.0138805854507292,0.639025153487826,0.
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   839.73204053899
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=839.73204 (started at 2378.7879)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.740034836138116,0.508377738538455,-0.158459311087499,-0.0161868971160293,0.576763499697423,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   712.215688114583
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=712.21569 (started at 1883.2835)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.744860875994863,0.472870298291921,-0.169316538303039,-0.063055658489828,0.578591627086292,0.355
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
```

```
#>
#>  Lowest minimum so far:   779.322833282627
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=779.32283 (started at 2148.3924)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.610151003814524,0.533415816372607,-0.11824102654331,0.0151964593258026,0.630268837659865,0.433
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   849.69783699305
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=849.69784 (started at 2403.5612)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6920942377780975,0.459600977375994,-0.0182040709098567,0.0234594987582832,0.658352601838684,0.45
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   870.890622415906
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=870.89062 (started at 2095.0482)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.630489207915276,0.489936472946584,-0.116365063730334,0.0118055807684063,0.620690127156141,0.39
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   764.234298031337
```

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

```
#>
#>  Solution found!   Final fit=764.2343 (started at 2310.0413)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.673941786772709,0.451766638156356,-0.14430031377606,0.07534885464837778,0.626701867582533,0.3972
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   957.4274414678
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=957.42744 (started at 2503.6656)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.760141350146887,0.497336252423846,-0.0725490859359169,-0.0416536041946392,0.619434230715362,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   632.875161889397
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=632.87516 (started at 1906.4761)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.69007965146927,0.46245751804421,-0.0899624123009421,-0.0167572402098592,0.631846456054017,0.373
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   692.427956002855
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=692.42796 (started at 2265.956)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.700816913814251,0.544239217390487,-0.0894915514165145,0.0126419784573903,0.611704901621403,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   706.366119321255
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=706.36612 (started at 2239.7701)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.695839723477225,0.46472885224069,-0.0706130554448589,0.0449906504025278,0.652575055342615,0.38
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   750.404839751116
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=750.40484 (started at 2117.0926)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.671664907425407,0.55318957973945,-0.0308056702025283,0.0276011917548705,0.576781769617635,0.379
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   833.811847930303
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=833.81185 (started at 2258.2304)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.642734460855169,0.523793632708228,-0.134213371696794,0.00796257714350268,0.606850173130265,0.35
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   861.323094690084
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=861.32309 (started at 2178.3975)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.735514792218746,0.539561468705758,-0.114808084367438,-0.0797856949383179,0.579642928478459,0.43
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   781.206069012818
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=781.20607 (started at 2225.8175)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.78284760823875,0.534658366721048,-0.0883641296453627,-0.0573438796729957,0.556312439863145,0.45
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   885.36740121005
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=885.3674 (started at 2385.7275)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.711775849305337,0.490550041984008,-0.0779880750755153,0.0286428530811266,0.59633188567126,0.367
#> Running DTVAR with 15 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   868.505867589922
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=868.50587 (started at 2296.2083)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.717055213946889,0.471028121408582,-0.041810600640984 3,-0.00748161508354662,0.619887650152528,0.
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   821.19776646439
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=821.19777 (started at 2174.2644)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.670086874977929,0.492580715111334,-0.100642980367104,0.0257867550069012,0.590105916259891,0.419
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   727.944185494791
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=727.94419 (started at 2324.5758)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.763019639463508,0.471127925169827,-0.0768763964252849,0.00279771004277369,0.626375263559661,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
```

```
#>
#>  Lowest minimum so far:   724.362924720719
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=724.36292 (started at 2045.8485)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.697188927121504,0.520043885826835,-0.144587832628856,0.0232773578642814,0.571287462832766,0.42
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   742.906028120223
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=742.90603 (started at 2162.7862)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.740258375592134,0.465558235783057,-0.14373881114532,-0.0252277480397728,0.602761788253299,0.41
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   797.484023499049
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=797.48402 (started at 2143.5016)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.676277606733817,0.501583782268018,-0.0618799133664132,-0.0193574359741472,0.614583018656662,0.
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   766.575208661036
```

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

```
#>
#>  Solution found!   Final fit=766.57521 (started at 2135.0557)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.706698526045207,0.51074971206244,-0.089803275218297,0.0336899049312096,0.602806025646738,0.357
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   749.349505885142
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=749.34951 (started at 1911.4686)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.653912558677998,0.510585995096145,-0.1009885347750 26,-0.0413977061430136,0.545606868396408,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   889.183458248158
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=889.18346 (started at 2154.5893)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.664379053783866,0.510280151693526,-0.0987370952318672,-0.00146945860934262,0.568846397397242,0
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   724.168558489231
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=724.16856 (started at 1889.3562)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.654046197131038,0.563554256678825,-0.137360951266441,0.00744730235297006,0.529154684415908,0.39
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   812.05425774453
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=812.05426 (started at 2389.0484)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.74690803382656,0.472837183765252,-0.0883688986039327,-0.0404167118878994,0.65314348318347,0.374
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   811.512604041679
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=811.5126 (started at 2144.8002)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.739028843552582,0.431069623239479,-0.0462031796417602,-0.0387743493697862,0.628542063711434,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   818.14441843131
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=818.14442 (started at 1939.0374)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.643440689941413,0.394425724915292,-0.043013115612467 4,-0.00769139207440101,0.671201359953199,0
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   751.662352048066
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=751.66235 (started at 2044.3254)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.663633752307167,0.522334527453896,-0.114397250807944,0.0268506978928804,0.600435128192096,0.390
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   764.999567741 73
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=764.99957 (started at 2074.7797)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.625063434413151,0.472195002990695,-0.141339344507948,0.0406453150998842,0.64972395989459,0.4378
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   768.771638801627
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=768.77164 (started at 2004.5256)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.744387048658098,0.465936319169119,-0.0692204812121617,-0.0676254343 17398,0.568648239016455,0.35
#> Running DTVAR with 15 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   741.223147927199
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=741.22315 (started at 1960.8679)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.662178986606254,0.438474896341751,-0.0111441925900123,0.0120288350962392,0.594398336541729,0.32
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   780.385157054497
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=780.38516 (started at 2175.7975)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.713267805261913,0.506186719101421,-0.151924512693277,-0.0274707095069332,0.624141932476995,0.40
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   798.994200370789
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=798.9942 (started at 2177.0374)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.679564039033337,0.477657713021943,-0.0379101420211647,0.0154876012439871,0.616824922782552,0.37
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
```

```
#>
#>  Lowest minimum so far:   787.032257794068
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=787.03226 (started at 2228.0785)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716093128499543,0.554203787207634,-0.123075956657834,-0.04176985988102,0.571815562071364,0.423
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   750.579916498107
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=750.57992 (started at 2268.5273)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.685706333266576,0.5512978275777568,-0.106731549565384,-0.00624268828544698,0.607956888473743,0.
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   806.520062595804
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=806.52006 (started at 2135.2237)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.712756518281646,0.474138232688571,-0.190220552268146,-0.0284035086483672,0.622511768652749,0.42
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   764.768889133337
```

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

```
#>
#>  Solution found!   Final fit=764.76889 (started at 2421.1065)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.771947411218063,0.515368495840845,-0.074273682960108,-0.041848997217317,0.582032587892082,0.33
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   838.428693478898
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=838.42869 (started at 2367.2177)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.746723049029146,0.532030786145634,-0.100660956420024,-0.0488513503547325,0.598473259529766,0.38

#>
#> Means of the estimated paramaters per individual.
#>      beta_11      beta_21      beta_31      beta_12      beta_22      beta_32
#>  0.697411238  0.494126414 -0.099414353 -0.003943614  0.609035370  0.399948361
#>      beta_13      beta_23      beta_33       psi_11       psi_22       psi_33
#> -0.006720675 -0.007667865  0.512705033  0.097224954  0.094105717  0.092953229
#>     theta_11     theta_22     theta_33
#>  0.001572721  0.002286445  0.004884334
#>
#> Estimated paramaters per individual.
#>         beta_11   beta_21     beta_31      beta_12   beta_22   beta_32
#>  [1,] 0.7164616 0.4611301 -0.11105809  0.003019957 0.6279624 0.4261113
#>  [2,] 0.6420409 0.4678800 -0.17993612  0.038191035 0.6511933 0.4733130
#>  [3,] 0.6508043 0.5009362 -0.11786995  0.035858365 0.5810331 0.4552952
#>  [4,] 0.6941457 0.5081466 -0.10508033  0.004279825 0.6325285 0.4488441
#>  [5,] 0.6558422 0.4830390 -0.08536577  0.028660570 0.6638999 0.3751165
#>  [6,] 0.6847434 0.4775259 -0.06527163  0.031300588 0.5718294 0.4010956
#>  [7,] 0.7095017 0.5125024 -0.06755681  0.030951784 0.6141264 0.3723004
#>  [8,] 0.7334140 0.4705832 -0.17297955 -0.010916247 0.6306095 0.3969598
#>  [9,] 0.6683777 0.5114749 -0.02028855 -0.055357003 0.6373847 0.3735515
#> [10,] 0.7299722 0.4904324 -0.17046779 -0.006138180 0.6180631 0.4317216
#> [11,] 0.7086490 0.4709375 -0.08625111 -0.013880585 0.6390252 0.4149137
#> [12,] 0.7400348 0.5083777 -0.15845931 -0.016186897 0.5767635 0.4676938
```

```
#> [13,] 0.7448609 0.4728703 -0.16931654 -0.063055658 0.5785916 0.3553644
#> [14,] 0.6101510 0.5334158 -0.11824103  0.015196459 0.6302688 0.4338454
#> [15,] 0.6920942 0.4596010 -0.01820407  0.023459499 0.6583526 0.4548461
#> [16,] 0.6304892 0.4899365 -0.11636506  0.011805581 0.6206901 0.3993082
#> [17,] 0.6739418 0.4517666 -0.14430031  0.075348855 0.6267019 0.3972015
#> [18,] 0.7601414 0.4973363 -0.07254909 -0.041653604 0.6194342 0.4097237
#> [19,] 0.6900797 0.4624575 -0.08996241 -0.016757240 0.6318465 0.3736057
#> [20,] 0.7008169 0.5442392 -0.08949155  0.012641978 0.6117049 0.4091443
#> [21,] 0.6958397 0.4647289 -0.07061306  0.044990650 0.6525751 0.3874159
#> [22,] 0.6716649 0.5531896 -0.03080567  0.027601192 0.5767818 0.3797173
#> [23,] 0.6427345 0.5237936 -0.13421337  0.007962577 0.6068502 0.3511182
#> [24,] 0.7355148 0.5395615 -0.11480808 -0.079785695 0.5796429 0.4334503
#> [25,] 0.7828476 0.5346584 -0.08836413 -0.057343880 0.5563124 0.4577418
#> [26,] 0.7117758 0.4905500 -0.07798808  0.028642853 0.5963319 0.3679173
#> [27,] 0.7170552 0.4710281 -0.04181060 -0.007481615 0.6198877 0.3721121
#> [28,] 0.6700869 0.4925807 -0.10064298  0.025786755 0.5901059 0.4194662
#> [29,] 0.7630196 0.4711279 -0.07687640  0.002797710 0.6263753 0.3494942
#> [30,] 0.6971889 0.5200439 -0.14458783  0.023277358 0.5712875 0.4200947
#> [31,] 0.7402584 0.4655582 -0.14373881 -0.025227748 0.6027618 0.4175442
#> [32,] 0.6762776 0.5015838 -0.06187991 -0.019357436 0.6145830 0.4066435
#> [33,] 0.7066985 0.5107497 -0.08980328  0.033689905 0.6028060 0.3577867
#> [34,] 0.6539126 0.5105860 -0.10098853 -0.041397706 0.5456069 0.3989759
#> [35,] 0.6643791 0.5102802 -0.09873710 -0.001469459 0.5688464 0.4084109
#> [36,] 0.6540462 0.5635543 -0.13736095  0.007447302 0.5291547 0.3997621
#> [37,] 0.7469080 0.4728372 -0.08836890 -0.040416712 0.6531435 0.3748769
#> [38,] 0.7390288 0.4310696 -0.04620318 -0.038774349 0.6285421 0.3835053
#> [39,] 0.6434407 0.3944257 -0.04301312 -0.007691392 0.6712014 0.3729662
#> [40,] 0.6636338 0.5223345 -0.11439725  0.026850698 0.6004351 0.3908360
#> [41,] 0.6250634 0.4721950 -0.14133934  0.040645315 0.6497240 0.4378201
#> [42,] 0.7443870 0.4659363 -0.06922048 -0.067625434 0.5686482 0.3592140
#> [43,] 0.6621790 0.4384749 -0.01114419  0.012028835 0.5943983 0.3289104
#> [44,] 0.7132678 0.5061867 -0.15192451 -0.027470710 0.6241419 0.4062484
#> [45,] 0.6795640 0.4776577 -0.03791014  0.015487601 0.6168249 0.3708392
#> [46,] 0.7160931 0.5542038 -0.12307596 -0.041769860 0.5718156 0.4239406
#> [47,] 0.6857063 0.5512978 -0.10673155 -0.006242688 0.6079569 0.4005313
#> [48,] 0.7127565 0.4741382 -0.19022055 -0.028403509 0.6225118 0.4230814
#> [49,] 0.7719474 0.5153685 -0.07427368 -0.041848997 0.5820326 0.3376331
#> [50,] 0.7467230 0.5320308 -0.10066096 -0.048851350 0.5984733 0.3894083
#>             beta_13      beta_23   beta_33     psi_11     psi_22     psi_33
#>  [1,]  3.766317e-02 -0.016345436 0.4934312 0.09236374 0.10442077 0.09418047
#>  [2,] -3.039192e-02 -0.061941125 0.4926855 0.09906899 0.07960573 0.09880335
#>  [3,]  3.475711e-02  0.010209483 0.4141094 0.10950857 0.09957810 0.09872075
#>  [4,] -5.250420e-02 -0.030570765 0.5109898 0.08988196 0.10353898 0.09601916
#>  [5,]  4.273465e-02 -0.079027104 0.5148336 0.10635445 0.08725885 0.07892691
#>  [6,] -3.768283e-02  0.063910377 0.5273272 0.08383575 0.09563108 0.10747281
```

```
#>  [7,] -6.526069e-04  0.002000145 0.5466347 0.09380005 0.10741389 0.09190075
#>  [8,]  4.244160e-02 -0.003183516 0.5059309 0.10667380 0.09209919 0.09148722
#>  [9,]  1.608064e-02  0.025614843 0.5227472 0.09348786 0.10123567 0.08319584
#> [10,] -3.164636e-02 -0.056458659 0.5050547 0.09839597 0.09874686 0.09885437
#> [11,] -1.568184e-02  0.022657738 0.4853395 0.10499147 0.09092551 0.08895953
#> [12,] -1.496094e-02  0.060982507 0.4568771 0.09795977 0.09503800 0.09899880
#> [13,] -6.378334e-04 -0.015268963 0.6049683 0.07329583 0.09738876 0.06871748
#> [14,]  3.320598e-02  0.017498755 0.4797227 0.09207338 0.09401527 0.10071881
#> [15,] -2.476779e-02 -0.015043387 0.4523456 0.10868927 0.08273325 0.10557275
#> [16,] -2.819986e-02  0.035089013 0.4828441 0.10336119 0.08858965 0.10600010
#> [17,] -8.707046e-02 -0.019797193 0.5465111 0.10494830 0.09187816 0.09417204
#> [18,] -2.038088e-02  0.034964401 0.4693306 0.09912709 0.11382641 0.10855420
#> [19,]  1.302201e-02 -0.049697005 0.5099423 0.09152345 0.09077048 0.08171782
#> [20,] -1.002701e-02  0.006251420 0.5232418 0.08944294 0.07371405 0.09294576
#> [21,] -6.847174e-02  0.001447690 0.5244951 0.09141821 0.08795520 0.09522026
#> [22,] -3.931470e-03 -0.017788400 0.4985261 0.09230367 0.09537950 0.09250936
#> [23,]  2.668758e-02  0.012154138 0.5436509 0.10073262 0.09859029 0.10414695
#> [24,]  3.686378e-02  0.004514794 0.4913220 0.08245162 0.08920633 0.11799349
#> [25,] -1.505631e-02 -0.010122282 0.5153913 0.08540981 0.08843964 0.11047319
#> [26,] -1.441471e-02  0.008765207 0.4981161 0.10674457 0.10263822 0.10376810
#> [27,] -8.354347e-03 -0.034710466 0.5152589 0.10463155 0.08126531 0.09709956
#> [28,] -5.591711e-02  0.043112275 0.4863374 0.10749345 0.09086468 0.07371757
#> [29,] -2.013070e-02 -0.039823495 0.5542045 0.09588067 0.09383071 0.06386961
#> [30,] -6.378280e-02 -0.048349518 0.5191366 0.09850824 0.07649089 0.09285293
#> [31,]  2.498214e-02  0.009953295 0.5504394 0.08409356 0.09585258 0.10070906
#> [32,] -3.632402e-02 -0.017129954 0.5211696 0.10597891 0.09529868 0.09550857
#> [33,] -1.123729e-02 -0.044437187 0.5189988 0.08772250 0.10669606 0.06850908
#> [34,]  1.180646e-02  0.055463757 0.5006901 0.09812656 0.10251585 0.08812633
#> [35,]  2.591107e-02 -0.013062927 0.5241400 0.10577028 0.09759321 0.09805987
#> [36,] -7.133156e-02 -0.023283097 0.5603537 0.08335335 0.09955857 0.08718484
#> [37,]  6.033340e-02 -0.071700889 0.5057200 0.10376679 0.09788812 0.09673510
#> [38,]  1.079314e-02 -0.015748556 0.5703136 0.09162317 0.10015825 0.07291221
#> [39,] -5.583577e-04 -0.054405849 0.5548292 0.10171390 0.09431218 0.07681613
#> [40,] -6.906682e-04 -0.033504542 0.4643871 0.09968897 0.08431593 0.09522548
#> [41,] -2.055312e-02 -0.041010373 0.5311478 0.09473547 0.08679171 0.08822046
#> [42,]  1.181530e-02  0.005593402 0.5117619 0.10172685 0.08670598 0.10468680
#> [43,] -2.896889e-06  0.028079543 0.5423085 0.09650685 0.09456594 0.09616731
#> [44,] -1.994431e-02  0.024671580 0.4682612 0.08863689 0.10268666 0.09362246
#> [45,] -2.282194e-02  0.003263242 0.5064731 0.09936083 0.10017878 0.09863568
#> [46,] -2.384530e-03 -0.016295706 0.4737930 0.10989715 0.09951130 0.08770627
#> [47,]  1.634332e-03 -0.001545819 0.5593939 0.09066959 0.09840567 0.09086780
#> [48,] -1.392834e-02  0.010457792 0.4803077 0.10266049 0.08500429 0.10048385
#> [49,]  1.631428e-02  0.008679559 0.5817116 0.10656805 0.07989994 0.07821633
#> [50,]  2.136035e-02 -0.048475969 0.5177453 0.10428929 0.10427674 0.09169790
#>            theta_11      theta_22      theta_33
```

```
#>  [1,] 2.225074e-308 2.225074e-308 2.225074e-308
#>  [2,] 2.225074e-308  1.464547e-02  1.269386e-19
#>  [3,] 2.225074e-308 2.225074e-308 2.225074e-308
#>  [4,] 2.225074e-308 2.225074e-308  1.302846e-03
#>  [5,] 2.225074e-308  1.576320e-03  1.245195e-02
#>  [6,]  3.666163e-03 2.225074e-308 2.225074e-308
#>  [7,]  1.607324e-19 2.225074e-308  5.910728e-03
#>  [8,] 2.225074e-308  2.245924e-03  7.892839e-03
#>  [9,] 2.225074e-308 2.225074e-308  7.280182e-03
#> [10,]  2.574118e-03  6.804078e-04  6.115631e-03
#> [11,] 2.225074e-308  4.168304e-03  6.005025e-03
#> [12,]  4.689487e-03  3.236772e-03  1.223587e-19
#> [13,]  1.212605e-02 2.225074e-308  1.645887e-02
#> [14,] 2.225074e-308  5.060936e-03 2.225074e-308
#> [15,]  1.419617e-19  7.290366e-03 2.225074e-308
#> [16,]  8.401209e-04  9.396101e-03  7.830437e-12
#> [17,]  6.434454e-04 2.225074e-308 2.225074e-308
#> [18,]  4.831738e-03  1.188155e-16 2.225074e-308
#> [19,]  2.205590e-20  2.345178e-03 2.225074e-308
#> [20,]  5.045966e-03  5.344695e-03  4.534657e-03
#> [21,]  1.642515e-17  3.353896e-03  3.926251e-17
#> [22,] 2.225074e-308  2.169525e-11  6.625254e-03
#> [23,]  5.197862e-04 2.225074e-308 2.225074e-308
#> [24,]  6.221437e-03  7.516133e-03  4.378229e-18
#> [25,]  6.072042e-03 2.225074e-308 2.225074e-308
#> [26,] 2.225074e-308  1.585642e-03 2.225074e-308
#> [27,]  1.221152e-04  1.006065e-02  9.575892e-03
#> [28,] 2.225074e-308  2.395562e-03  2.274723e-02
#> [29,] 2.225074e-308 2.225074e-308  2.218218e-02
#> [30,]  2.092274e-17  1.136586e-02  6.204831e-17
#> [31,]  1.548097e-03 2.225074e-308  4.094985e-03
#> [32,] 2.225074e-308  3.403937e-19 2.225074e-308
#> [33,] 2.225074e-308 2.225074e-308  2.511476e-02
#> [34,] 2.225074e-308 2.225074e-308 2.225074e-308
#> [35,]  1.999120e-18  6.586468e-18  1.278184e-02
#> [36,]  8.608285e-03 2.225074e-308 2.225074e-308
#> [37,]  1.257461e-03  3.639422e-17  2.456655e-04
#> [38,]  9.931603e-03 2.225074e-308  1.607135e-02
#> [39,]  3.571817e-19  2.583702e-03  1.923330e-02
#> [40,] 2.225074e-308  6.237216e-03  7.262931e-04
#> [41,] 2.225074e-308  4.372065e-03  1.228876e-02
#> [42,]  1.401408e-12  2.111938e-12  6.122937e-13
#> [43,]  2.866907e-18  1.065039e-17  2.498983e-17
#> [44,]  4.699373e-03  9.264095e-04  3.618272e-14
#> [45,] 2.225074e-308 2.225074e-308 2.225074e-308
```

```
#> [46,] 2.225074e-308 2.225074e-308 2.225074e-308
#> [47,]  5.071705e-03 2.225074e-308 2.225074e-308
#> [48,] 2.225074e-308  7.934663e-03 2.225074e-308
#> [49,]  4.358055e-18  3.053929e-18  2.212884e-02
#> [50,]  1.670474e-04 2.225074e-308  2.447623e-03
#> Test passed
```

```
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   759.332723034344
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=759.33272 (started at 1269.463)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716461758437843,0.461130191666003,-0.111058148174027,0.0030200041261131,0.627962448123618,0.42
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   806.575163455561
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=806.57516 (started at 1263.8017)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.642040842337781,0.467879957302954,-0.179936110124873,0.0381910451593652,0.651193248152161,0.47
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   851.056191919859
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=851.05619 (started at 1283.4513)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.650804222894663,0.500936251593524,-0.117869952112375,0.0358583811672622,0.581033146790623,0.45
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   758.9219604127 71
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=758.92196 (started at 1280.9902)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.694145815275769,0.508146615679182,-0.105080283215847,0.00427986204525697,0.632528520372581,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   753.7733697383 95
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=753.77337 (started at 1245.9536)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.655842156758283,0.483039090838455,-0.0853657352734665,0.0286605631286008,0.663899878277403,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   767.578383629565
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=767.57838 (started at 1248.7605)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.684743460532873,0.477525955966706,-0.0652716091687147,0.0313006708108778,0.571829336502837,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   807.28424750855
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=807.28425 (started at 1279.8614)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.709501676634885,0.512502336636108,-0.0675568762412412,0.0309518226132435,0.61412652133169,0.372
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   828.417185355646
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=828.41719 (started at 1289.1724)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.733414061595624,0.470583170924404,-0.172979577245718,-0.0109162070811166,0.630609483549607,0.39
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   745.584294109788
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=745.58429 (started at 1249.7777)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.668377630542745,0.511475453164255,-0.0202885565842843,-0.0553563932536087,0.637384992680389,0.3
#> Running DTVAR with 15 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   850.925330776764
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=850.92533 (started at 1303.4348)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.72997204545551,0.490432211586737,-0.17046788030684,-0.00613823680017927,0.61806314672304,0.431
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   798.451119275729
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=798.45112 (started at 1269.6943)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.708648889982693,0.470937476916329,-0.0862512036135647,-0.0138805315368036,0.639025147886761,0.
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   839.732040538987
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=839.73204 (started at 1290.7195)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.74003483820895,0.5083777713971286,-0.158459314047424,-0.0161868870396697,0.576763518829339,0.46
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
```

```
#>
#>  Lowest minimum so far:   712.215688114525
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=712.21569 (started at 1226.2001)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.744860701014166,0.472870266244513,-0.169316517262399,-0.0630555881649142,0.57859163272296,0.355
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   779.322833282548
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=779.32283 (started at 1264.1231)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.610151148501048,0.533415877751536,-0.11824109516717,0.0151965015019173,0.630268727025805,0.4338
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   849.697836992959
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=849.69784 (started at 1293.5893)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.692094399142155,0.45960087471704,-0.0182040496789536,0.0234592932653013,0.658352817424359,0.454
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   870.890622411543
```

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

```
#>
#>  Solution found!   Final fit=870.89062 (started at 1288.8022)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.630488374538645,0.489936220830775,-0.116364215310398,0.0118056079519682,0.620689464637226,0.39
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   764.234298031323
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=764.2343 (started at 1267.7093)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.673941710440566,0.451766625528361,-0.144300351576307,0.0753489277392367,0.626701848734124,0.39
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   957.427441467686
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=957.42744 (started at 1359.8388)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.760141482189062,0.497336200005095,-0.0725490027676362,-0.0416536352150075,0.619434209641242,0.
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   632.87516188937
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=632.87516 (started at 1190.6779)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.690079549161334,0.462457536133155,-0.0899623898138986,-0.0167572036207578,0.631846373260565,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   692.427956002861
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=692.42796 (started at 1219.1617)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.700816788829819,0.544239347208657,-0.0894915125776793,0.0126420799051425,0.611704700767452,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   706.366119321263
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=706.36612 (started at 1234.2618)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.695839752666626,0.464728884339015,-0.0706130746570692,0.044990628142973,0.652575108016369,0.38
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   750.404839750736
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=750.40484 (started at 1237.087)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.671664781234 84,0.553189625146978,-0.0308057222342839,0.027601250168,0.576781801604953,0.3797173
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   833.811847930206
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=833.81185 (started at 1289.3303)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.642734284602601,0.523793567581215,-0.134213340626304,0.00796268230460696,0.606850260704215,0.35
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   861.323094690067
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=861.32309 (started at 1304.0155)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.735514770599 16,0.539561436011556,-0.114808112124893,-0.0797858042651696,0.579642890288922,0.433
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   781.20606901283
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=781.20607 (started at 1286.0687)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.782847715394805,0.53465836808526,-0.0883641074876594,-0.0573440036279908,0.556312477257739,0.45
#> Running DTVAR with 15 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   885.367401210055
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=885.3674 (started at 1307.0484)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.7117758963236,0.490550024940013,-0.0779880939698595,0.0286428520839387,0.596331891435639,0.367
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   868.505867589902
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=868.50587 (started at 1294.3839)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.71705511546391,0.471028051058085,-0.0418105425018051,-0.00748158165279561,0.619887707362907,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   821.1977664644
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=821.19777 (started at 1271.1003)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.670086899102041,0.492580629728582,-0.100643002593687,0.0257867517905107,0.590105970322189,0.419
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
```

```
#>
#>  Lowest minimum so far:   727.944185494788
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=727.94419 (started at 1244.5256)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.763019650732731,0.47112792908743,-0.0768764169465705,0.00279768013035594,0.626375292168206,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   724.362924720713
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=724.36292 (started at 1239.4922)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.697188961069481,0.520043902702995,-0.144587817715342,0.02327732729800057,0.571287405624845,0.42
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   742.906028120171
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=742.90603 (started at 1249.6157)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.740258300099922,0.46555819622903,-0.143738757844071,-0.0252277624228367,0.602761852332509,0.41
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   797.484023499131
```

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

```
#>
#>  Solution found!   Final fit=797.48402 (started at 1276.9744)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.676277713699807,0.501583709604157,-0.0618798834683327,-0.0193573872650549,0.614583091327375,0.
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   766.575208661055
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=766.57521 (started at 1244.8122)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.706698494843894,0.51074968535068,-0.0898033240219249,0.0336899557199775,0.602806060946354,0.35
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   749.349505885155
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=749.34951 (started at 1234.0191)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.653912535069556,0.510585935629446,-0.10098852974448,-0.0413977124000361,0.545606924108695,0.39
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   889.183458248218
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=889.18346 (started at 1303.4446)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6643790711573 56,0.5102801795296 79,-0.098737095965046,-0.00146959616917592,0.568846343690379,0.
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   724.168558489256
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=724.16856 (started at 1232.2381)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.654046178119208,0.563554144888112,-0.137360940407508,0.00744732378414449,0.529154762675578,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   812.054257744494
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=812.05426 (started at 1295.8227)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.746907951395072,0.472837085832296,-0.088368945570211,-0.040416662942 4604,0.653143519790933,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   811.512604041678
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=811.5126 (started at 1267.5692)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.739028935478103,0.431069625155677,-0.0462031899547762,-0.038774357048488,0.628542083591703,0.38
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   818.144418431308
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=818.14442 (started at 1265.0377)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.643440690103258,0.394425714366549,-0.0430131135159192,-0.00769139276849248,0.671201341943623,0.
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   751.662352048059
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=751.66235 (started at 1234.5385)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.663633837090128,0.522334475017155,-0.114397137262380,0.0268506945454028,0.600435204251913,0.39083
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   764.999567741745
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=764.99957 (started at 1246.4515)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.625063516993732,0.472194995509425,-0.14133929826262,0.0406452195956692,0.649723946790513,0.4378
#> Running DTVAR with 15 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   768.771638793144
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=768.77164 (started at 1278.0876)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.744386877775468,0.465935504807415,-0.069218975419667,-0.0676241546377264,0.568648834523172,0.35
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   741.223147927245
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=741.22315 (started at 1237.5214)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.662179016367172,0.438475014935734,-0.0111442398981491,0.0120288030331276,0.594398281096874,0.32
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   780.385157052709
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=780.38516 (started at 1265.6089)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.713268812726702,0.5061880811591,-0.151924519970821,-0.0274708874637253,0.624141238697565,0.4062
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
```

```
#>
#>  Lowest minimum so far:   798.994200370797
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=798.9942 (started at 1270.784)  (1 attempt(s):  1 valid,
0 errors)
#>  Start values from best fit:
#> 0.679564011450766,0.477657712458193,-0.037910129689108,0.0154875683749217,0.616824909978278,0.370
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   787.0322577794073
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=787.03226 (started at 1297.8714)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716093126762651,0.554203776621668,-0.123075969534599,-0.041769844153819,0.571815554554838,0.423
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   750.579916498102
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=750.57992 (started at 1265.077)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.685706307831887,0.551297808278873,-0.106731596207885,-0.0062427481969548 4,0.607956900875783,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   806.520062595823
```

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

```
#>
#>  Solution found!   Final fit=806.52006 (started at 1274.2474)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.712756511335722,0.474138255239102,-0.190220505042505,-0.0284035670469025,0.622511820552135,0.42
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   764.768889133334
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=764.76889 (started at 1270.7289)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.771947428062622,0.515368485130007,-0.0742736679019981,-0.0418490061426828,0.582032595950792,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   838.428693478879
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=838.42869 (started at 1312.6182)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.746723106040598,0.532030839778084,-0.100661085528115,-0.0488513654349201,0.598473252869153,0.38

#> Test passed
```

```
#> test-external-fitDTVARMx-fit-dt-var-id-mx-theta-null
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   759.332723034266
```

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

```
#>
#>  Solution found!   Final fit=759.33272 (started at 2818.8767)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716461594268781,0.461130103434526,-0.111058104052503,0.00301990065158215,0.627962466371071,0.42
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   811.221283431467
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=811.22128 (started at 2588.505)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.644376822379958,0.498319862422355,-0.160138757853946,0.0339457523281381,0.60202505558271,0.4385
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   851.056191919888
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=851.05619 (started at 2728.4921)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.650804152587558,0.500936223533729,-0.117869966244044,0.0358584466671872,0.581033255621994,0.455
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   758.939240001087
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=758.93924 (started at 2854.9595)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6942524827475 68,0.508254712117 76,-0.105604057104861,0.00403646757951646,0.632271243648902,0.45
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   755.237014820988
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=755.23701 (started at 2812.8936)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.655922071168991,0.485798777687836,-0.0839744194072475,0.0298173300980825,0.656191959996754,0.385
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   767.863852470668
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=767.86385 (started at 2522.5355)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6661111148917,0.464519076919049,-0.0655319370278874,0.0379815425135491,0.576484188972957,0.401
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   807.608080756468
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=807.60808 (started at 3214.4662)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.7095130550531,0.512499712173206,-0.0692805896211676,0.0311077019364299,0.614389046595127,0.379
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   828.951705065187
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=828.95171 (started at 3126.4497)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.733264788863225,0.473562971107431,-0.173022757515241,-0.0104990839461825,0.625703544856902,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   746.033688503384
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=746.03369 (started at 2638.9239)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.668484301092742,0.51138621629638,-0.0225537318120472,-0.0555161115431583,0.637385379142246,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   851.374280350207
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=851.37428 (started at 3004.5656)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.718825722836537,0.48235380270807,-0.169307336880467,-0.00202819864122296,0.619552406230925,0.4
#> Running DTVAR with 12 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   799.274821858165
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=799.27482 (started at 2962.9231)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.708588261228634,0.475388229135813,-0.0854309590011715,-0.0141769414286767,0.629365493947916,0.
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   840.483916141231
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=840.48392 (started at 3098.1221)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.720735518069381,0.499551991405701,-0.149780544748022,-0.00930202643115042,0.574215681169346,0.
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   718.539233542402
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=718.53923 (started at 2186.5411)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.677880341672318,0.431826450749655,-0.166188298322661,-0.0373797352663127,0.594622543905395,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
```

```
#>
#>  Lowest minimum so far:   779.766644444407
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=779.76664 (started at 2675.0592)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.609971646719175,0.539347774502O1,-0.112605660413882,0.0157158111595143,0.616305811402161,0.424
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   850.752343563444
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=850.75234 (started at 3142.1671)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.691623804012226,0.4715444858975O5,-0.0100294723327233,0.0250565521854465,0.633323731032243,0.43
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   872.34306757139
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=872.34307 (started at 2583.8942)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6279867466069O8,0.503358922499O5,-0.108103630273034,0.0109464645923342,0.592093464791283,0.384
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   764.239047454334
```

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

```
#>
#>  Solution found!   Final fit=764.23905 (started at 2962.0687)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.67105294053085,0.449887649000752,-0.143458815256208,0.0768224346437029,0.627515746666162,0.396
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   957.9243757375O5
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=957.92438 (started at 3332.8123)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.739922346378846,0.485927042232824,-0.0717538017632368,-0.0342026956014292,0.6240774938083,0.40
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   633.011904428566
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=633.0119 (started at 2223.8663)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.690213513068111,0.466362670344152,-0.0879599163745913,-0.0170226181885829,0.624374818924666,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   694.317115186718
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=694.31712 (started at 2880.1989)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.674456574145247,0.531884168814988,-0.0838788035112604,0.0242219856483305,0.605791688734476,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   706.595319003195
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=706.59532 (started at 2831.2135)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.696198361443529,0.47033350806689,-0.0677346577381333,0.0443111669122736,0.641500229796633,0.38
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   750.698512473323
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=750.69851 (started at 2617.189)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.671673577610027,0.553223041143065,-0.0309216980368968,0.027945584674691,0.576180619805424,0.38
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   833.816258681054
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=833.81626 (started at 2874.4152)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.64049956448347 8,0.521837363160335,-0.133809910294518,0.00875136386287813,0.607513730708 68,0.35
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   863.215725480729
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=863.21573 (started at 2735.9084)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.702336925380831,0.526763645809178,-0.103029422237239,-0.0646796395406807,0.566209899448809,0.41
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   782.276989787587
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=782.27699 (started at 2818.3029)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.751079842826758,0.515348162651717,-0.0856261602381017,-0.0423177565833913,0.565376921520485,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   885.400081850406
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=885.40008 (started at 3108.7275)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.711902034855524,0.492753831090941,-0.0766983681358221,0.0284133659575973,0.592131565493811,0.3
#> Running DTVAR with 12 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   870.776467535204
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=870.77647 (started at 2947.4234)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.717342945794694,0.483864010973883,-0.0377741740801736,-0.00846860357385741,0.59273073403503,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   825.091328764683
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=825.09133 (started at 2726.9105)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.671378784761566,0.495755549187164,-0.106318495635697,0.0223503756046088,0.58423655700464,0.439
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   732.6579075079 78
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=732.65791 (started at 2991.6161)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.764032648283235,0.471287001814766,-0.082229982090093,-0.00101245837563025,0.622298962927359,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
```

```
#>
#>  Lowest minimum so far:   726.376014908232
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=726.37601 (started at 2487.1488)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.698020505561103,0.540256679924573,-0.130671049333998,0.0219015717434524,0.536368805316912,0.39
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   743.06253438225
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=743.06253 (started at 2694.1576)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.731754835793631,0.460965075767634,-0.1434716820242,-0.0216993813992399,0.6049383953541,0.42084
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   797.484023499137
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=797.48402 (started at 2668.9238)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.676277694793617,0.501583771707843,-0.06187973035375,-0.0193575825688431,0.614583065520855,0.40
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   770.977494676037
```

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

```
#>
#>  Solution found!   Final fit=770.97749 (started at 2648.519)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.706895800327194,0.511010577888189,-0.0872678711618278,0.0314694503916333,0.601610168470179,0.38
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   749.349505885161
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=749.34951 (started at 2244.6977)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.653912522999667,0.510586048106383,-0.100988573067708,-0.0413976764995652,0.545606806035989,0.39
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   889.8616765020777
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=889.86168 (started at 2694.2373)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.664289371279109,0.510244936756276,-0.101676667621902,-0.00118367999328859,0.569508402437711,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   725.595924157009
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=725.59592 (started at 2203.3335)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.611388349409092,0.524511358890167,-0.124184584243865,0.0219294400932992,0.542040604736846,0.395
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   812.090920433365
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=812.09092 (started at 3110.0582)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.741751912941588,0.469320559388466,-0.0879921988685319,-0.0380914370049528,0.654436793094238,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   815.197848341689
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=815.19785 (started at 2666.7364)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.693227460778832,0.409815304298299,-0.0514572211617755,-0.0205940886660018,0.635597773482195,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   820.593168415493
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=820.59317 (started at 2295.3086)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.643304825135551,0.397856735560794,-0.038646819321803 4,-0.00783303145434867,0.661822704299331,0
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   752.466226469855
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=752.46623 (started at 2484.7537)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.664098311347438,0.53099071164222,-0.106972800626957,0.0260199511752171,0.584333638614264,0.3782
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   766.219955415809
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=766.21996 (started at 2540.8022)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.624786762223102,0.480327062303527,-0.141720219803405,0.0410521888955309,0.634241889450656,0.444
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   768.771638793145
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=768.77164 (started at 2411.4559)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.744386847205346,0.465935456534318,-0.0692189873376725,-0.0676241295919464,0.568648772015181,0.3
#> Running DTVAR with 12 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   741.223147927192
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=741.22315 (started at 2324.9388)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.66217885362191,0.438474928833818,-0.011144207357192,0.0120288807502441,0.594398291774759,0.328
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   780.836285441667
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=780.83629 (started at 2722.6984)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.690347402204549,0.490311341041875,-0.146390022374425,-0.0195401602514742,0.627402518041284,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   798.994200370794
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=798.9942 (started at 2724.6975)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.679564030022408,0.477657702995945,-0.037910120568797,0.0154876263593496,0.616824927873006,0.37
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
```

```
#>
#>  Lowest minimum so far:   787.032257794103
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=787.03226 (started at 2825.0508)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716093080348548,0.554203770132493,-0.123075968768171,-0.0417698302704187,0.571815555828147,0.42
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   751.084607795309
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=751.08461 (started at 2890.0689)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.66130950231391,0.532629819541967,-0.101641409043792,0.00192165906897013,0.614479809469556,0.398
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   807.680486764465
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=807.68049 (started at 2653.0473)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.7115368732752 76,0.486718967297324,-0.182176023621629,-0.0261125305270112,0.599294484813252,0.40
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   767.418593752537
```

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

```
#>
#>  Solution found!   Final fit=767.41859 (started at 3168.4061)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.771433701226941,0.515790796170361,-0.0891381959878861,-0.0397577895392098,0.579395644538703,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   838.480905826361
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=838.48091 (started at 3078.7657)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.746043240966985,0.531610392262968,-0.101115749197125,-0.0485678713783249,0.598258784644551,0.39

#> Test passed

#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   759.332723034257
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=759.33272 (started at 767.23983)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716461585428167,0.461130087272103,-0.111058101747436,0.00301995000147525,0.627962429370563,0.42
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   811.221283431381
```

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

```
#>
#>  Solution found!   Final fit=811.22128 (started at 819.93175)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.644376917883203,0.498319815027411,-0.160138649888563,0.0339457279840114,0.602025160800339,0.438
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   851.056191919858
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=851.05619 (started at 866.15931)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.650804232121634,0.500936239033408,-0.117869944184811,0.0358583580157441,0.581033136227764,0.455
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   758.939240001087
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=758.93924 (started at 772.80857)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.69425247833575,0.508254712519871,-0.105604056657861,0.00403646721373456,0.632271246543257,0.450
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   755.237014820981
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=755.23701 (started at 771.21109)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.655922064526889,0.485798758415577,-0.0839744808979841,0.0298172928302494,0.656191949541491,0.38
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   767.863852470667
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=767.86385 (started at 783.11641)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.666111127492906,0.464519086417875,-0.0655319230812842,0.0379815355531992,0.576484176671073,0.40
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   807.608080756468
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=807.60808 (started at 815.15868)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.709513062158392,0.512499708099355,-0.0692805796170135,0.0311076914010664,0.614389043033527,0.37
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   828.951705065182
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=828.95171 (started at 841.57206)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.733264749902263,0.473562995775331,-0.173022759603442,-0.0104990560166985,0.625703542569827,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   746.033688503379
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=746.03369 (started at 764.8049)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.668484300948304,0.511386214511344,-0.0225537199171085,-0.055516139531005 4,0.637385350117328,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   851.374280350157
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=851.37428 (started at 861.62867)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.718825604736078,0.482353834528678,-0.169307271979635,-0.00202808228451628,0.61955237324617,0.43
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   799.274821858098
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=799.27482 (started at 805.58759)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.708588218330156,0.475388236341846,-0.0854308202552785,-0.0141769860920425,0.629365591372229,0.4
#> Running DTVAR with 12 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   840.483916141223
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=840.48392 (started at 851.00179)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.7207355111764,0.499551928552273,-0.14978054704757,-0.00930203523468703,0.574215742590509,0.458
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   718.539233542033
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=718.53923 (started at 741.63598)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6778879886561889,0.431826550789902,-0.166188403762372,-0.0373795473864487,0.594622470548096,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   779.766644444383
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=779.76664 (started at 793.31737)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.609971703606512,0.539347830163897,-0.112605600194933,0.0157157744132437,0.616305785508771,0.42
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
```

```
#>
#>  Lowest minimum so far:   850.752343563441
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=850.75234 (started at 870.41089)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.691623842946204,0.471544492587184,-0.01002945583283,0.025056547442537,0.633323728415006,0.4381
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   872.343067571387
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=872.34307 (started at 882.368)  (1 attempt(s):  1 valid,
0 errors)
#>  Start values from best fit:
#> 0.627986713114911,0.503358910622752,-0.108103614997471,0.0109464800897341,0.592093469438707,0.38
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   764.239047454333
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=764.23905 (started at 784.80812)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.67105294959542,0.449887642591952,-0.143458786756119,0.0768224565147059,0.627515758592816,0.396
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   957.924375737499
```

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

```
#>
#>  Solution found!   Final fit=957.92438 (started at 976.21158)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.739922367162102,0.48592706713264,-0.0717538245459881,-0.034202697660309,0.624077503132598,0.40
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   633.011904428516
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=633.0119 (started at 649.09008)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.690213663823057,0.46636269930082,-0.0879598248789163,-0.0170226022112735,0.624374780340516,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   694.317115186692
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=694.31712 (started at 706.63832)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.674456627932046,0.531884177705681,-0.0838787762828761,0.0242219079571848,0.605791639568043,0.40
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   706.595319002982
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=706.59532 (started at 719.7453)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.696198214011712,0.470333597005126,-0.067734751668189,0.0443113891228755,0.641500260684122,0.38
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   750.698512473295
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=750.69851 (started at 759.7683)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.671673609111645,0.553223089870081,-0.0309216931729336,0.0279455905537439,0.576180579623614,0.38
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   833.816258681048
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=833.81626 (started at 845.53725)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.640499502275901,0.521837377170588,-0.133809939141175,0.00875139451452418,0.607513714681973,0.35
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   863.215725480724
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=863.21573 (started at 880.21941)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.70233691503351,0.52676364141794,-0.103029350673975,-0.0646796152983735,0.566209875148732,0.4158
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   782.27698978736
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=782.27699 (started at 802.16016)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.751080033038349,0.515348048019857,-0.0856262567981077,-0.0423177000638963,0.565376873969739,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   885.4000818504
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=885.40008 (started at 891.24522)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.711902092021382,0.492753826033058,-0.0766983353095619,0.0284133293266239,0.592131583550737,0.36
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   870.776467535192
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=870.77647 (started at 879.61589)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.717343023727884,0.483863994996277,-0.037774213058378,-0.00846865630005986,0.592730738847854,0.3
#> Running DTVAR with 12 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   825.091328764672
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=825.09133 (started at 836.69057)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.671378801101552,0.495755542356324,-0.106318444891222,0.0223503254606083,0.584236589649017,0.43
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   732.657907507961
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=732.65791 (started at 743.57505)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.764032687703439,0.471287014221847,-0.0822300063767158,-0.00101252774380534,0.622298975740 47,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   726.376014908232
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=726.37601 (started at 742.41338)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.698020502933625,0.540256680629718,-0.130671062767118,0.021901574828572,0.536368802056704,0.397
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
```

```
#>
#>  Lowest minimum so far:   743.062534381883
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=743.06253 (started at 756.40648)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.731754806899753,0.460964906274982,-0.143471428894092,-0.0216994359253728,0.604938695643486,0.42
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   797.484023499046
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=797.48402 (started at 806.83396)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.676277609893595,0.501583766265347,-0.0618798951792299,-0.0193574397570838,0.614583011607736,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   770.977749467596
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=770.97749 (started at 784.17806)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.706895709607195,0.511010671262467,-0.0872678739613862,0.031469593081064 3,0.601610179752207,0.38
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   749.349505885138
```

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

```
#>
#>  Solution found!   Final fit=749.34951 (started at 762.66042)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.653912563390342,0.510586038131102,-0.100988567723116,-0.0413977100766392,0.545606865185711,0.39
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   889.86167650208
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=889.86168 (started at 899.62257)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.664289357214513,0.510244947029733,-0.101676632875796,-0.00118367609196996,0.569508435314849,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   725.595924156994
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=725.59592 (started at 751.84398)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.611388387413602,0.524511305659563,-0.124184601280723,0.0219294512140722,0.542040628278474,0.395
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   812.090920433347
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=812.09092 (started at 825.67386)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.741751985990055,0.469320568926058,-0.08799220120145,-0.0380914980600275,0.654436815220724,0.375
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   815.197848341626
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=815.19785 (started at 829.66831)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.693227358332933,0.409815382546601,-0.0514574408005689,-0.0205940175054711,0.635597713904742,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   820.593168415362
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=820.59317 (started at 838.4595)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.643304808567l6,0.397856533791987,-0.0386467541729308,-0.00783303856946256,0.661822861740966,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   752.466226469853
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=752.46623 (started at 760.05983)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.664098292782441,0.530990710130654,-0.106972799788052,0.0260199662012602,0.584333638667574,0.378
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   766.2199554155775
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=766.21996 (started at 777.65895)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.624786753491203,0.480326983366548,-0.141720275922804,0.041052227184432,0.634241947184696,0.4442
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   768.77163879313
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=768.77164 (started at 784.45062)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.744386876914039,0.465935520562982,-0.0692190128049471,-0.0676241467206233,0.568648789348167,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   741.223147927187
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=741.22315 (started at 755.42182)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.662178896542466,0.438474917081386,-0.0111442189404204,0.01202887882265,0.594398301245561,0.3289
#> Running DTVAR with 12 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   780.836285441667
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=780.83629 (started at 791.00989)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.690347404317 57,0.490311348311 71,-0.146390033092329,-0.0195401623412294,0.627402508235676,0.403
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   798.994200370 79
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=798.9942 (started at 803.52761)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.679564032087 63,0.477657744319 45,-0.0379101593064794,0.0154875956487848,0.616824904549432,0.3708
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   787.032257794067
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=787.03226 (started at 800.57952)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716093132611 14,0.554203807091305,-0.123075940611452,-0.0417698485929651,0.571815552896042,0.423
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
```

```
#>
#>  Lowest minimum so far:   751.084607795309
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=751.08461 (started at 761.5739)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.66130950018045,0.532629821554621,-0.101641402677008,0.00192166165092056,0.614479804396606,0.398
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   807.680486764455
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=807.68049 (started at 816.98743)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.71153682967932,0.486719003709776,-0.182176075602796,-0.0261125286606419,0.5992944461216,0.40825
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   767.418593752494
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=767.41859 (started at 787.98087)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.771433727134554,0.515790729464576,-0.089138196614291,-0.0397577183528818,0.579395652411828,0.36
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   838.480905826358
```

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

```
#>
#>  Solution found!  Final fit=838.48091 (started at 847.96006)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.746043269189541,0.531610400000595,-0.101115741712202,-0.0485678796475715,0.598258794430362,0.3
```

```
#> Test passed
```

```
#> test-external-fitDTVARMx-fit-dt-var-mx-theta-null
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:  8072.92388058287
#>
#> Solution found
```

```
#>
#>  Solution found!  Final fit=8072.9239 (started at 28769.589)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.694275926032199,0.483981161681256,-0.109921409205969,0.0106893320171428,0.623128242090866,0.41
```

```
#> Test passed
```

```
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:  8072.92388058283
#>
#> Solution found
```

```
#>
#>  Solution found!  Final fit=8072.9239 (started at 8083.6837)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.694275886602082,0.483981180543278,-0.109921405855694,0.0106893607115448,0.623128244320184,0.41
```

```
#> Test passed
#> [[1]]
#> [[1]][[1]]
```

```
#> [[1]][[1]]$value
#> [[1]][[1]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[1]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[2]]
#> [[1]][[2]]$value
#> [[1]][[2]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[2]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[3]]
#> [[1]][[3]]$value
#> [[1]][[3]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[3]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[4]]
#> [[1]][[4]]$value
#> [[1]][[4]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[4]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[5]]
#> [[1]][[5]]$value
#> [[1]][[5]]$value[[1]]
#> [1] TRUE
#>
#>
```

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

Environment

```
ls()

#> [1] "root"
```

Class

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

References

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