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; Timestamp: 100826-053155

; Project folder: NORMAL.NONMEM.EXECUTION
; Working folder: WORKING
; Control stream: Analyze-2CompartmentWithCovariate.pltc

; Analysis performed on TwiceTwo-2 by user fisher
; PLT Tools started at 2010-08-26 05:31:55
; NONMEM started at 2010-08-26 05:31:59
; NONMEM completed at 2010-08-26 05:33:25

Thu Aug 26 05:31:59 JST 2010
;-----
; PLT Tools copied and/or reformatted the $DATA record of the control stream. The following line was replaced:
; $DATA ../DATAFILES/TwoCompartmentData.csv IGNORE=@ WIDE; "Requests that FDATA contain single-line records"
; with:
; $DATA Data.100826-053155-TEPCOPY.txt IGNORE=@ WIDE; "Requests that FDATA contain single-line records"
;-----
;C Data for this analysis were generated with a two-compartment model in which relative bioavailability varied
;C with dose. The control stream includes a factor for F as a function of dose.
;
$PROBLEM Analyze a Dataset for Use in PLT Tools - Covariate Added
$INPUT PTID=ID          EVD1=EVID      EVD2          AMT          NTME          TIME
       DSGR            LGDS          GRUP          AGE          WT           CRCL
       CP=DV
;-----
; UNITS
; Time - hours
; Dose - mcg
; Cp - ng/ml = mcg/L
; Clearances - L/hour
; Volumes - L
;-----
; EVD1: uses all DV values
; EVD2: =2 for BQL values
; NTME: nominal time (for use in VPC graphics)
; Note aliasing of ID to PTID - Excel may fail if cell A1 starts with "ID"
$DATA Data.100826-053155-TEPCOPY.txt IGNORE=@ WIDE; "Requests that FDATA contain single-line records"
$SUBROUTINES ADVAN4
$PK      FFCTR = 1 + (LGDS - 1.5) * THETA(8)
        CL    = THETA(1) * EXP(ETA(1))
        V1    = THETA(2) * EXP(ETA(2))
        CLRA  = THETA(3) * EXP(ETA(3))
        V2    = THETA(4) * EXP(ETA(4))
        KA    = THETA(5) * EXP(ETA(5))
        LAG   = THETA(6) * EXP(ETA(6))
        F1    = THETA(7) * EXP(ETA(7)) * FFCTR
;-----
        S1    = V1
        K     = CL / V1
        K23   = CLRA / V1
        K32   = CLRA / V2
        ALAG1 = LAG
$ERROR  IPRED = F
        Y     = IPRED * (1+EPS(1)) + EPS(2)
$THETA (0 0.3          ) ; THETA(1) is CL

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(0 2          ) ; THETA(2) is V1
(0 0.1        ) ; THETA(3) is CLdist
(0 2          ) ; THETA(4) is V2
(0 0.5        ) ; THETA(5) is ka
(0 0.1        ) ; THETA(6) is LAG
(1 FIX       ) ; THETA(7) is F1
(0.01        ) ; THETA(8) is factor for effect of dose on F
$OMEGA (0.1          ) ; OMEGA1 applies to CL
(0.1         ) ; OMEGA2 applies to V1
(0.1         ) ; OMEGA3 applies to CLdist
(0.1         ) ; OMEGA4 applies to V2
$OMEGA (0.1          ) ; OMEGA5 applies to KA
(0.2         ) ; OMEGA6 applies to LAG
(0 FIX       ) ; OMEGA7 applies to F1
$$SIGMA (0.10        ) ; SIGMA1 is proportional error term
(0.10       ) ; SIGMA2 is additive error term
$ESTIMATION
METHOD=1      PRINT=1      MAXEVALS=9999  NOABORT
SIGDIGITS=3   POSTHOC      INTER          MSFO=msfo.outputfile
$COVARIANCE
$TABLE ID      EVID      AMT      TIME      IPRED
NOPRINT FILE=AllRecords.txt
$TABLE ID
CL      V1      CLRA      V2      KA      LAG
ETA1    ETA2    ETA3    ETA4    ETA5    ETA6
FIRSTONLY  NOPRINT      NOAPPEND      FILE=FirstRecords.txt
License Registered to: Dennis Fisher
Expiration Date:      14 OCT 2010
Current Date:        26 AUG 2010
Days until program expires : 48
1NONLINEAR MIXED EFFECTS MODEL PROGRAM (NONMEM) VERSION 7.1.0
ORIGINALLY DEVELOPED BY STUART BEAL, LEWIS SHEINER, AND ALISON BOECKMANN
CURRENT DEVELOPERS ARE ROBERT BAUER, ICON DEVELOPMENT SOLUTIONS,
AND ALISON BOECKMANN. IMPLEMENTATION, EFFICIENCY, AND STANDARDIZATION
PERFORMED BY NOUS INFOSYSTEMS.

PROBLEM NO.:      1
Analyze a Dataset for Use in PLT Tools - Covariate Added
ODATA CHECKOUT RUN:      NO
DATA SET LOCATED ON UNIT NO.:      2
THIS UNIT TO BE REWOUND:      NO
NO. OF DATA RECS IN DATA SET:      468
NO. OF DATA ITEMS IN DATA SET:      14
ID DATA ITEM IS DATA ITEM NO.:      1
DEP VARIABLE IS DATA ITEM NO.:      13
MDV DATA ITEM IS DATA ITEM NO.:      14
0INDICES PASSED TO SUBROUTINE PRED:
  2  6  4  0  0  0  0  0  0
  0  0
0LABELS FOR DATA ITEMS:
PTID EVD1 EVD2 AMT NTME TIME DSGR LGDS GRUP AGE WT CRCL CP MDV
0(NONBLANK) LABELS FOR PRED-DEFINED ITEMS:
CL      V1      CLRA      V2      KA      LAG      IPRE
0FORMAT FOR DATA:
(E5.0,2E2.0,2E4.0,E7.0,E4.0,E7.0,E2.0,E3.0,2E4.0,E7.0,1F2.0)

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TOT. NO. OF OBS RECS: 432  
 TOT. NO. OF INDIVIDUALS: 36  
 OLENGTH OF THETA: 8  
 ODEFAULT THETA BOUNDARY TEST OMITTED: NO  
 OOMEGA HAS BLOCK FORM:  
 1  
 0 2  
 0 0 3  
 0 0 0 4  
 0 0 0 0 5  
 0 0 0 0 0 6  
 0 0 0 0 0 0 7  
 ODEFAULT OMEGA BOUNDARY TEST OMITTED: NO  
 OSIGMA HAS SIMPLE DIAGONAL FORM WITH DIMENSION: 2  
 ODEFAULT SIGMA BOUNDARY TEST OMITTED: NO  
 OINITIAL ESTIMATE OF THETA:  
 LOWER BOUND INITIAL EST UPPER BOUND  
 0.0000E+00 0.3000E+00 0.1000E+07  
 0.0000E+00 0.2000E+01 0.1000E+07  
 0.0000E+00 0.1000E+00 0.1000E+07  
 0.0000E+00 0.2000E+01 0.1000E+07  
 0.0000E+00 0.5000E+00 0.1000E+07  
 0.0000E+00 0.1000E+00 0.1000E+07  
 0.1000E+01 0.1000E+01 0.1000E+01  
 -0.1000E+07 0.1000E-01 0.1000E+07  
 OINITIAL ESTIMATE OF OMEGA:  
 BLOCK SET NO. BLOCK FIXED  
 1 NO  
 2 0.1000E+00 NO  
 3 0.1000E+00 NO  
 4 0.1000E+00 NO  
 5 0.1000E+00 NO  
 6 0.1000E+00 NO  
 7 0.2000E+00 YES  
 0.0000E+00  
 OINITIAL ESTIMATE OF SIGMA:  
 0.1000E+00  
 0.0000E+00 0.1000E+00  
 OESTIMATION STEP OMITTED: NO  
 OCONDITIONAL ESTIMATES USED: YES  
 OCENTERED ETA: NO  
 OEPS-ETA INTERACTION: YES  
 OLAPLACIAN OBJ. FUNC.: NO  
 NO. OF FUNCT. EVALS. ALLOWED: 9999  
 NO. OF SIG. FIGURES REQUIRED: 3  
 OINTERMEDIATE PRINTOUT: YES  
 OESTIMATE OUTPUT TO MSF: YES  
 OABORT WITH PRED EXIT CODE 1: NO  
 OIND. OBJ. FUNC. VALUES SORTED: NO  
 OCOVARIANCE STEP OMITTED: NO

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EIGENVLS. PRINTED:      NO
SPECIAL COMPUTATION:   NO
COMPRESSED FORMAT:     NO
0TABLES STEP OMITTED:  NO
NO. OF TABLES:        2
0-- TABLE 1 --
PRINTED:                NO
HEADER:                 YES
FILE TO BE FORWARDED:  NO
0USER-CHOSEN ITEMS:
  PTID EVD1 AMT TIME IPRED
0-- TABLE 2 --
0FIRST RECORDS ONLY:   YES
04 COLUMNS APPENDED:  NO
PRINTED:                NO
HEADER:                 YES
FILE TO BE FORWARDED:  NO
0USER-CHOSEN ITEMS:
  PTID CL V1 CLRA V2 KA LAG ETA1 ETA2 ETA3 ETA4 ETA5 ETA6
    
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THE FOLLOWING LABELS ARE EQUIVALENT
PRED=PREDI
RES=RESI
WRES=WRESI
1DOUBLE PRECISION PREDPP VERSION 7.1.0
    
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TWO COMPARTMENT MODEL WITH FIRST-ORDER ABSORPTION (ADVAN4)
0MAXIMUM NO. OF BASIC PK PARAMETERS: 5
0BASIC PK PARAMETERS (AFTER TRANSLATION):
  BASIC PK PARAMETER NO. 1: ELIMINATION RATE (K)
  BASIC PK PARAMETER NO. 2: CENTRAL-TO-PERIPH. RATE (K23)
  BASIC PK PARAMETER NO. 3: PERIPH.-TO-CENTRAL RATE (K32)
  BASIC PK PARAMETER NO. 5: ABSORPTION RATE (KA)
    
```

0COMPARTMENT ATTRIBUTES

COMPT. NO.	FUNCTION	INITIAL STATUS	ON/OFF ALLOWED	DOSE ALLOWED	DEFAULT FOR DOSE	DEFAULT FOR OBS.
1	DEPOT	OFF	YES	YES	YES	NO
2	CENTRAL	ON	NO	YES	NO	YES
3	PERIPH.	ON	NO	YES	NO	NO
4	OUTPUT	OFF	YES	NO	NO	NO

1 ADDITIONAL PK PARAMETERS - ASSIGNMENT OF ROWS IN GG

COMPT. NO.	SCALE	BIOAVAIL. FRACTION	ZERO-ORDER RATE	ZERO-ORDER DURATION	ABSORB LAG
1	7	6	*	*	8
2	*	*	*	*	*
3	*	*	*	*	*
4	*	-	-	-	-

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- PARAMETER IS NOT ALLOWED FOR THIS MODEL
* PARAMETER IS NOT SUPPLIED BY PK SUBROUTINE;
  WILL DEFAULT TO ONE IF APPLICABLE
    
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0DATA ITEM INDICES USED BY PRED ARE:
EVENT ID DATA ITEM IS DATA ITEM NO.: 2
TIME DATA ITEM IS DATA ITEM NO.: 6
DOSE AMOUNT DATA ITEM IS DATA ITEM NO.: 4
    
```

OPK SUBROUTINE CALLED WITH EVERY EVENT RECORD.  
 PK SUBROUTINE NOT CALLED AT NONEVENT (ADDITIONAL OR LAGGED) DOSE TIMES.  
 OERROR SUBROUTINE CALLED WITH EVERY EVENT RECORD.  
 1

#METH: First Order Conditional Estimation with Interaction  
 MONITORING OF SEARCH:

0	ITERATION NO.:	0	OBJECTIVE VALUE:	1154.61893483307	NO. OF FUNC. EVALS.:	11														
	CUMULATIVE NO. OF FUNC. EVALS.:					11														
	PARAMETER:	1.0000E-01	1.0000E-01	1.0000E-01	1.0000E-01	1.0000E-01	1.0000E-01	1.0000E-01	1.0000E-01	1.0000E-01	1.0000E-01	1.0000E-01	1.0000E-01	1.0000E-01	1.0000E-01	1.0000E-01	1.0000E-01	1.0000E-01	1.0000E-01	1.0000E-01
	GRADIENT:	-2.0605E+01	4.1846E+01	-3.7370E+01	1.6980E+01	1.8812E+02	-2.8689E+01	1.6299E+01	1.8916E+01	2.4621E+00	-1.6488E-01									
		4.8794E+00	-9.7154E+01	1.3961E+01	-1.4970E+02	5.2063E+01														
1	ITERATION NO.:	1	OBJECTIVE VALUE:	1095.21110937146	NO. OF FUNC. EVALS.:	23														
	CUMULATIVE NO. OF FUNC. EVALS.:					23														
	PARAMETER:	1.3286E-01	3.3268E-02	1.5959E-01	7.2922E-02	-2.0000E-01	1.4575E-01	7.4007E-02	6.9834E-02	9.6074E-02	1.0026E-01									
	GRADIENT:	-1.3573E+01	2.1301E+01	-1.5848E+01	8.8822E+00	4.2994E+01	-1.8071E+01	1.2633E+01	1.6978E+01	6.0091E+00	4.7549E+00									
		4.3870E+00	-2.4851E+01	4.8271E+00	8.1319E+01	6.3181E+01														
2	ITERATION NO.:	2	OBJECTIVE VALUE:	1081.09877502322	NO. OF FUNC. EVALS.:	35														
	CUMULATIVE NO. OF FUNC. EVALS.:					35														
	PARAMETER:	1.5670E-01	-6.1332E-03	1.9021E-01	5.6591E-02	-3.0112E-01	1.7776E-01	5.2415E-02	4.1438E-02	8.6905E-02	9.3449E-02									
	GRADIENT:	8.4883E-02	3.1097E-01	6.7874E-02	2.5280E-01	-8.4876E-02	-6.9099E+00	-1.6418E+01	1.3262E+01	1.6689E+01	4.7945E+00	4.7471E+00								
		6.7519E+00	-8.8883E+00	-5.5817E+00	8.6857E+00	5.3880E+01														
		4.9370E+00	-1.7924E+01	7.0853E+00	-1.5215E+01															
3	ITERATION NO.:	3	OBJECTIVE VALUE:	1063.24757131449	NO. OF FUNC. EVALS.:	47														
	CUMULATIVE NO. OF FUNC. EVALS.:					47														
	PARAMETER:	1.2884E-01	3.0666E-02	2.2156E-01	1.1236E-02	-2.6528E-01	2.6478E-01	-1.7714E-02	-4.7707E-02	6.0162E-02	6.7306E-02									
	GRADIENT:	5.8791E-02	3.9922E-01	3.2364E-02	2.5534E-01	-3.7912E-01	-1.3180E+00	-3.4220E+01	1.2964E+01	1.4113E+01	2.4264E+00	4.7843E+00								
		-2.4587E+01	1.6295E+01	3.2265E+00	6.0246E+00	4.0919E+01														
		5.8903E+00	-1.0241E+01	-4.2457E+00	3.4313E+00															
4	ITERATION NO.:	4	OBJECTIVE VALUE:	1040.66810538979	NO. OF FUNC. EVALS.:	59														
	CUMULATIVE NO. OF FUNC. EVALS.:					59														
	PARAMETER:	2.0853E-01	4.3269E-03	2.1687E-01	-4.5363E-02	-1.7961E-01	4.7810E-01	-1.2400E-01	-1.7141E-01	3.1708E-02	2.7253E-02									
	GRADIENT:	1.3955E-02	4.9018E-01	2.8181E-02	2.8141E-01	-7.5737E-01	-2.6376E+01	1.2207E+01	1.1459E+01	-9.9785E-01	3.9917E+00									
		2.5490E+01	-2.1873E+01	-5.9444E+00	3.7764E+00	2.0381E+01														
		6.2587E+00	-2.1334E+00	1.1469E+01	3.0374E+01	2.6488E+01														
5	ITERATION NO.:	5	OBJECTIVE VALUE:	1023.68252203646	NO. OF FUNC. EVALS.:	72														
	CUMULATIVE NO. OF FUNC. EVALS.:					72														
	PARAMETER:	1.8653E-01	5.6250E-02	1.9749E-01	-6.3533E-02	-1.8996E-01	6.7752E-01	-1.9377E-01	-2.3307E-01	3.9522E-02	3.7022E-03									
	GRADIENT:	-2.3596E-02	4.8631E-01	1.2232E-02	2.7752E-01	-8.8173E-01	-2.7899E+01	1.2258E+01	1.0466E+01	-4.1733E-01	4.2014E+00									
		-5.5399E+00	1.2297E+01	-7.2034E+00	1.8293E+00	1.0372E+01														
		6.0808E+00	-2.7850E+00	1.8846E+01	5.8652E+01	2.2126E+01														
6	ITERATION NO.:	6	OBJECTIVE VALUE:	998.881572142076	NO. OF FUNC. EVALS.:	85														
	CUMULATIVE NO. OF FUNC. EVALS.:					85														
	PARAMETER:	1.6065E-01	7.0768E-02	2.1117E-01	-7.8649E-02	-1.7197E-01	9.4136E-01	-3.0086E-01	-3.1687E-01	5.5844E-02	-2.9105E-02									
	GRADIENT:	-7.9630E-02	4.9747E-01	-1.3455E-01	2.7130E-01	-1.0026E+00	-2.6035E+00	1.2054E+01	8.5019E+00	-1.2276E+00	3.6639E+00									
		-2.6775E+01	3.0663E+01	-6.9914E+00	4.4052E+00	9.3209E+01														
		6.0814E+00	-1.9591E-01	1.8339E+01	9.1181E+01	1.8346E+01														
7	ITERATION NO.:	7	OBJECTIVE VALUE:	995.213964809766	NO. OF FUNC. EVALS.:	97														
	CUMULATIVE NO. OF FUNC. EVALS.:					97														
	PARAMETER:	2.2630E-01	1.2789E-01	1.6259E-01	-1.7577E-01	-1.9620E-01	9.5311E-01	-4.8558E-01	-4.1458E-01	1.3961E-01	-6.5534E-02									
		-1.8974E-01	4.4543E-01	-2.3081E-01	2.6901E-01	-1.0476E+00														

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GRADIENT: 1.0755E+01 3.1447E+01 -2.1303E+01 -1.9044E+01 -6.6344E+00 -1.3359E+01 1.1749E+01 8.3586E+00 4.0577E+00 3.0291E+00
4.0721E+00 -5.1520E+00 8.7545E+00 9.2145E+01 1.7131E+01
0ITERATION NO.: 8 OBJECTIVE VALUE: 983.345140227990 NO. OF FUNC. EVALS.:12
CUMULATIVE NO. OF FUNC. EVALS.: 109
PARAMETER: 1.3875E-01 1.0942E-02 1.8568E-01 -1.3530E-01 -2.0553E-01 9.4287E-01 -1.5110E+00 -9.1278E-01 4.9957E-01 -2.3069E-01
-7.5896E-01 3.1436E-01 -2.4441E-01 2.7036E-01 -1.1368E+00
GRADIENT: 3.0409E+00 6.9289E+00 -1.8613E+01 9.8946E+00 -1.1923E+01 -9.1201E+00 9.4353E+00 3.1418E+00 3.4170E+01 1.9721E+00
1.5440E+00 -7.8127E+00 5.7700E+00 9.1212E+01 1.3218E+01
0ITERATION NO.: 9 OBJECTIVE VALUE: 962.297607384226 NO. OF FUNC. EVALS.:12
CUMULATIVE NO. OF FUNC. EVALS.: 121
PARAMETER: 5.7340E-02 -5.4709E-02 3.6749E-01 -3.8320E-01 -1.6203E-01 9.9750E-01 -3.0523E+00 -1.5467E+00 3.6853E-01 -4.4811E-01
-1.5670E+00 2.9438E-01 -1.5882E-01 2.3562E-01 -1.0247E+00
GRADIENT: 2.0624E+01 1.6608E+01 3.0455E+01 -6.6468E+01 -1.8258E+01 -1.9780E+00 9.5427E+00 4.1611E-01 3.0792E+01 1.4782E+00
-8.9456E-02 3.1582E+00 1.6156E+01 7.5528E+01 1.5850E+01
0ITERATION NO.: 10 OBJECTIVE VALUE: 933.116269876311 NO. OF FUNC. EVALS.:12
CUMULATIVE NO. OF FUNC. EVALS.: 133
PARAMETER: -4.4639E-02 -1.2396E-01 2.3583E-01 -4.0948E-01 -1.7691E-01 9.9432E-01 -5.4735E+00 -2.4893E+00 -1.2556E-01 -7.7954E-01
-2.8027E+00 2.8590E-01 -1.8568E-01 1.8076E-01 -9.1627E-01
GRADIENT: -4.6101E+01 4.6354E+01 1.7643E+01 -1.6590E+01 -3.6304E+01 -1.4752E+01 5.5895E+00 -3.8138E-01 -1.4240E+01 8.0212E-01
3.5488E-02 1.5049E+01 1.3434E+01 4.1788E+01 1.8186E+01
0ITERATION NO.: 11 OBJECTIVE VALUE: 930.138641941037 NO. OF FUNC. EVALS.:12
CUMULATIVE NO. OF FUNC. EVALS.: 145
PARAMETER: -1.1160E-01 -2.3961E-01 2.7693E-01 -4.7308E-01 -2.1357E-01 1.0218E+00 -6.3351E+00 -2.2449E+00 -2.3148E-01 -6.5379E-01
-2.9331E+00 3.4116E-03 -2.5002E-01 2.1202E-01 -1.1118E+00
GRADIENT: -1.4308E+01 4.5328E+00 3.3162E+01 -2.1440E+01 -8.6257E+01 1.9699E+00 2.7254E+00 -1.1664E+00 -2.6662E+01 9.2917E-01
2.9744E-02 -4.9331E+00 7.5380E+00 4.3794E+01 1.0975E+01
0ITERATION NO.: 12 OBJECTIVE VALUE: 906.855720106130 NO. OF FUNC. EVALS.:15
CUMULATIVE NO. OF FUNC. EVALS.: 160
PARAMETER: -2.3595E-01 -3.0528E-01 9.2123E-02 -6.3452E-01 -1.3306E-01 1.1803E+00 -8.3616E+00 -1.4718E+00 -9.6487E-02 -2.7619E-01
-3.1764E+00 1.6717E-01 -3.3048E-01 1.5210E-01 -1.3708E+00
GRADIENT: -3.0042E+01 2.1812E+01 2.6131E+01 -1.4446E+01 -6.6402E+01 7.8784E+01 -5.7433E+00 -3.1788E+00 -1.4364E+01 2.0619E+00
1.8164E-02 1.0080E+01 7.6153E+00 3.4226E+01 4.6859E+00
0ITERATION NO.: 13 OBJECTIVE VALUE: 905.461256952609 NO. OF FUNC. EVALS.:12
CUMULATIVE NO. OF FUNC. EVALS.: 172
PARAMETER: -3.7200E-01 -4.5112E-01 -4.6061E-02 -7.5679E-01 -1.1828E-01 1.1370E+00 -8.3339E+00 -1.1746E+00 -5.8340E-02 -4.6243E-01
-3.2695E+00 1.8002E-01 -3.2372E-01 1.5563E-01 -1.4532E+00
GRADIENT: -2.4595E+01 1.3071E+01 2.3988E+01 -7.2739E+00 -5.4973E+01 6.9930E+01 -5.2097E+00 -3.8831E+00 -4.6673E+00 1.5508E+00
1.5962E-02 1.3863E+01 -1.5153E+00 3.8236E+01 3.4294E+00
0ITERATION NO.: 14 OBJECTIVE VALUE: 905.428308070347 NO. OF FUNC. EVALS.:13
CUMULATIVE NO. OF FUNC. EVALS.: 185
PARAMETER: -4.0583E-01 -4.8607E-01 -8.0607E-02 -7.8947E-01 -1.1644E-01 1.1308E+00 -8.3378E+00 -1.1293E+00 -5.5146E-02 -4.8015E-01
-3.2857E+00 1.8024E-01 -3.1952E-01 1.5593E-01 -1.4653E+00
GRADIENT: -2.3551E+01 1.2108E+01 2.3660E+01 -6.5960E+00 -5.3599E+01 7.0075E+01 -5.1875E+00 -3.9725E+00 -3.4813E+00 1.5189E+00
1.5601E-02 1.4201E+01 -2.1549E+00 3.8476E+01 3.2949E+00
0ITERATION NO.: 15 OBJECTIVE VALUE: 905.421272636421 NO. OF FUNC. EVALS.:13
CUMULATIVE NO. OF FUNC. EVALS.: 198
PARAMETER: -4.1767E-01 -4.9830E-01 -9.2699E-02 -8.0091E-01 -1.1580E-01 1.1286E+00 -8.3392E+00 -1.1135E+00 -5.4036E-02 -4.8634E-01
-3.2914E+00 1.8032E-01 -3.1806E-01 1.5603E-01 -1.4696E+00
GRADIENT: -2.3187E+01 1.1776E+01 2.3544E+01 -6.3607E+00 -5.3120E+01 7.0147E+01 -5.1796E+00 -3.9977E+00 -3.0633E+00 1.5081E+00
1.5479E-02 1.4316E+01 -2.3786E+00 3.8563E+01 3.2498E+00
0ITERATION NO.: 16 OBJECTIVE VALUE: 905.420860757422 NO. OF FUNC. EVALS.:17
CUMULATIVE NO. OF FUNC. EVALS.: 215
PARAMETER: -4.1852E-01 -4.9918E-01 -9.3568E-02 -8.0173E-01 -1.1575E-01 1.1285E+00 -8.3393E+00 -1.1124E+00 -5.3956E-02 -4.8678E-01
-3.2918E+00 1.8032E-01 -3.1796E-01 1.5604E-01 -1.4699E+00
GRADIENT: -2.3161E+01 1.1752E+01 2.3536E+01 -6.3438E+00 -5.3086E+01 7.0153E+01 -5.1791E+00 -3.9993E+00 -3.0333E+00 1.5073E+00
1.5470E-02 1.4324E+01 -2.3947E+00 3.8570E+01 3.2466E+00

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OITERATION NO.: 17 OBJECTIVE VALUE: 905.420657564230 NO. OF FUNC. EVALS.:18
CUMULATIVE NO. OF FUNC. EVALS.: 233
PARAMETER: -4.1895E-01 -4.9962E-01 -9.4006E-02 -8.0215E-01 -1.1573E-01 1.1284E+00 -8.3393E+00 -1.1118E+00 -5.3916E-02 -4.8701E-01
-3.2920E+00 1.8032E-01 -3.1791E-01 1.5604E-01 -1.4700E+00
GRADIENT: -2.3147E+01 1.1740E+01 2.3532E+01 -6.3353E+00 -5.3068E+01 7.0156E+01 -5.1788E+00 -4.0002E+00 -3.0181E+00 1.5069E+00
1.5466E-02 1.4329E+01 -2.4028E+00 3.8573E+01 3.2450E+00
OITERATION NO.: 18 OBJECTIVE VALUE: 905.420556494349 NO. OF FUNC. EVALS.:19
CUMULATIVE NO. OF FUNC. EVALS.: 252
PARAMETER: -4.1917E-01 -4.9985E-01 -9.4227E-02 -8.0236E-01 -1.1572E-01 1.1284E+00 -8.3394E+00 -1.1116E+00 -5.3896E-02 -4.8712E-01
-3.2921E+00 1.8033E-01 -3.1788E-01 1.5604E-01 -1.4701E+00
GRADIENT: -2.3141E+01 1.1734E+01 2.3530E+01 -6.3310E+00 -5.3060E+01 7.0157E+01 -5.1786E+00 -4.0006E+00 -3.0105E+00 1.5067E+00
1.5464E-02 1.4331E+01 -2.4069E+00 3.8575E+01 3.2442E+00
OITERATION NO.: 19 OBJECTIVE VALUE: 905.420556494349 NO. OF FUNC. EVALS.:30
CUMULATIVE NO. OF FUNC. EVALS.: 282
PARAMETER: -4.1917E-01 -4.9985E-01 -9.4227E-02 -8.0236E-01 -1.1572E-01 1.1284E+00 -8.3394E+00 -1.1116E+00 -5.3896E-02 -4.8712E-01
-3.2921E+00 1.8033E-01 -3.1788E-01 1.5604E-01 -1.4701E+00
GRADIENT: -2.6002E+01 9.0850E+00 2.3515E+01 -6.5976E+00 -5.3193E+01 -5.3032E+01 -5.2974E+00 -4.0006E+00 -3.0105E+00 1.5067E+00
1.5464E-02 1.4331E+01 -2.4069E+00 3.8456E+01 3.2024E+00
OITERATION NO.: 20 OBJECTIVE VALUE: 895.995008041838 NO. OF FUNC. EVALS.:21
CUMULATIVE NO. OF FUNC. EVALS.: 303
PARAMETER: -5.1021E-01 -5.8943E-01 -2.0452E-01 -8.8262E-01 -9.5258E-02 1.2142E+00 -7.5619E+00 -6.7436E-01 -7.7310E-02 -5.2292E-01
-3.6245E+00 1.8843E-01 -3.7720E-01 1.5735E-01 -1.6178E+00
GRADIENT: -2.4340E+01 1.5145E+01 1.4386E+01 -5.1902E+00 -4.1238E+01 -1.8267E+01 -9.8180E-01 -2.7601E+00 8.6668E+00 1.8173E+00
8.4804E-03 1.4436E+01 6.7534E+00 4.7434E+01 1.6727E+00
OITERATION NO.: 21 OBJECTIVE VALUE: 894.593873742302 NO. OF FUNC. EVALS.:22
CUMULATIVE NO. OF FUNC. EVALS.: 325
PARAMETER: -6.5251E-01 -7.3583E-01 -3.5019E-01 -1.0191E+00 -7.8038E-02 1.2116E+00 -7.5040E+00 -3.8755E-01 -8.6777E-02 -6.8533E-01
-3.8005E+00 1.8487E-01 -3.9022E-01 1.5775E-01 -1.7009E+00
GRADIENT: -1.7667E+01 1.0151E+01 1.1439E+01 -3.9210E+00 -3.2694E+01 -2.1785E+01 -4.3374E-01 3.1184E+00 1.4411E+01 1.3986E+00
6.2465E-03 1.5049E+01 4.1799E+00 4.9847E+01 9.8468E-01
OITERATION NO.: 22 OBJECTIVE VALUE: 889.620019277843 NO. OF FUNC. EVALS.:23
CUMULATIVE NO. OF FUNC. EVALS.: 348
PARAMETER: -7.4956E-01 -8.3702E-01 -4.7687E-01 -1.1193E+00 -3.9568E-02 1.2678E+00 -7.2315E+00 -4.0192E-01 -1.8132E-01 -9.2731E-01
-4.0891E+00 1.5219E-01 -4.8425E-01 1.4960E-01 -1.7720E+00
GRADIENT: -1.0083E+01 9.1407E+00 3.8903E+00 -2.9454E+00 -1.9802E+01 -1.9072E-01 8.5235E-01 1.2253E+00 1.0352E+01 8.7645E-01
3.1343E-03 1.2374E+01 1.3751E+00 4.5393E+01 -1.3032E-01
OITERATION NO.: 23 OBJECTIVE VALUE: 886.456218444186 NO. OF FUNC. EVALS.:21
CUMULATIVE NO. OF FUNC. EVALS.: 369
PARAMETER: -1.2864E+00 -1.3986E+00 -1.0945E+00 -1.6409E+00 1.0143E-01 1.2556E+00 -7.0071E+00 -4.7831E-01 -3.4989E-01 -1.4518E+00
-4.8412E+00 -2.8850E-02 -5.3810E-01 1.0157E-01 -2.0247E+00
GRADIENT: 2.4766E+01 -2.8508E+01 -2.1457E+01 2.5208E+01 5.9383E+01 -9.7614E+00 2.8833E+00 -6.3833E+00 1.6635E+00 3.1410E-01
0.0000E+00 -2.9032E+00 -7.1640E+00 -6.1236E+00 -2.3628E+00
OITERATION NO.: 24 OBJECTIVE VALUE: 883.515730920885 NO. OF FUNC. EVALS.:21
CUMULATIVE NO. OF FUNC. EVALS.: 390
PARAMETER: -1.1280E+00 -1.2297E+00 -9.1315E-01 -1.4871E+00 7.9218E-02 1.2718E+00 -7.1290E+00 -4.3159E-01 -3.3086E-01 -1.5172E+00
-4.7228E+00 -1.3196E-02 -5.4043E-01 1.0438E-01 -1.9839E+00
GRADIENT: 1.2685E+01 -1.5796E+01 -1.4648E+01 1.7766E+01 4.1270E+01 2.9138E-01 2.2105E+00 -3.8669E+00 3.8392E+00 2.7865E-01
0.0000E+00 -8.5042E-02 -5.0722E+00 -2.1187E+00 -1.8451E+00
OITERATION NO.: 25 OBJECTIVE VALUE: 882.350631558434 NO. OF FUNC. EVALS.:21
CUMULATIVE NO. OF FUNC. EVALS.: 411
PARAMETER: -1.0176E+00 -1.1166E+00 -7.9416E-01 -1.3841E+00 5.9835E-02 1.2678E+00 -7.2205E+00 -4.2072E-01 -3.1922E-01 -1.6273E+00
-4.5835E+00 -1.1607E-02 -5.2681E-01 1.0895E-01 -1.9504E+00
GRADIENT: 1.0553E+01 -1.1116E+01 -1.0870E+01 1.1438E+01 2.9410E+01 -1.4558E+00 1.6641E+00 -3.1089E+00 4.4032E+00 2.2060E-01
0.0000E+00 1.4107E+00 -4.2883E+00 2.8655E+00 -1.4205E+00
OITERATION NO.: 26 OBJECTIVE VALUE: 880.786199774505 NO. OF FUNC. EVALS.:21
CUMULATIVE NO. OF FUNC. EVALS.: 432

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PARAMETER: -6.8771E-01 -7.7718E-01 -4.1581E-01 -1.0505E+00 3.3716E-02 1.2825E+00 -7.4252E+00 -3.1439E-01 -3.3554E-01 -1.9306E+00
-4.5263E+00 -4.5523E-02 -5.1485E-01 1.1275E-01 -1.9126E+00
GRADIENT: -2.4249E+00 -2.5694E+00 -3.2958E-01 5.3260E+00 9.5371E+00 1.3507E+01 5.1212E-01 1.0825E+00 6.1752E+00 1.2056E-01
0.0000E+00 6.1868E-01 1.5210E-01 3.6850E+00 -7.5872E-01
0ITERATION NO.: 27 OBJECTIVE VALUE: 880.666729020947 NO. OF FUNC. EVALS.:21
CUMULATIVE NO. OF FUNC. EVALS.: 453
PARAMETER: -6.2226E-01 -7.0941E-01 -3.5896E-01 -9.9254E-01 2.0955E-02 1.2723E+00 -7.4551E+00 -3.2699E-01 -3.4059E-01 -2.0490E+00
-4.4450E+00 -4.5310E-02 -5.0511E-01 1.1257E-01 -1.8930E+00
GRADIENT: -1.7971E+00 5.8019E-01 3.5570E-02 1.1829E+00 2.5119E+00 6.3581E+00 2.8136E-01 3.3410E-01 5.5606E+00 9.2676E-02
1.3231E-03 1.0164E+00 -1.0069E+00 3.6374E+00 -6.3724E-01
0ITERATION NO.: 28 OBJECTIVE VALUE: 880.638477227653 NO. OF FUNC. EVALS.:21
CUMULATIVE NO. OF FUNC. EVALS.: 474
PARAMETER: -5.9827E-01 -6.8536E-01 -3.3532E-01 -9.6925E-01 1.9189E-02 1.2704E+00 -7.4613E+00 -3.2429E-01 -3.4648E-01 -2.0896E+00
-4.4459E+00 -4.5469E-02 -5.0168E-01 1.1274E-01 -1.8895E+00
GRADIENT: -1.6516E+00 7.7312E-01 2.0207E-01 6.7779E-01 1.6498E+00 5.4828E+00 2.2845E-01 3.1696E-01 5.4036E+00 8.5215E-02
1.3182E-03 1.0754E+00 -8.6370E-01 3.7631E+00 -5.9658E-01
0ITERATION NO.: 29 OBJECTIVE VALUE: 880.631802009647 NO. OF FUNC. EVALS.:23
CUMULATIVE NO. OF FUNC. EVALS.: 497
PARAMETER: -5.9434E-01 -6.8141E-01 -3.3145E-01 -9.6541E-01 1.8991E-02 1.2702E+00 -7.4616E+00 -3.2372E-01 -3.4778E-01 -2.0963E+00
-4.4474E+00 -4.5576E-02 -5.0144E-01 1.1274E-01 -1.8890E+00
GRADIENT: -1.6442E+00 8.1487E-01 2.1841E-01 6.1222E-01 1.5447E+00 5.3771E+00 2.2389E-01 3.1317E-01 5.3718E+00 8.4043E-02
1.3137E-03 1.0750E+00 -8.6886E-01 3.7556E+00 -5.9183E-01
0ITERATION NO.: 30 OBJECTIVE VALUE: 880.626635473901 NO. OF FUNC. EVALS.:24
CUMULATIVE NO. OF FUNC. EVALS.: 521
PARAMETER: -5.9156E-01 -6.7863E-01 -3.2869E-01 -9.6264E-01 1.8901E-02 1.2701E+00 -7.4618E+00 -3.2329E-01 -3.4879E-01 -2.1009E+00
-4.4489E+00 -4.5634E-02 -5.0124E-01 1.1273E-01 -1.8888E+00
GRADIENT: -1.6344E+00 8.1997E-01 2.2403E-01 5.9169E-01 1.5029E+00 5.3215E+00 2.2091E-01 3.0959E-01 5.3477E+00 8.3286E-02
1.3092E-03 1.0750E+00 -8.6042E-01 3.7471E+00 -5.8861E-01
0ITERATION NO.: 31 OBJECTIVE VALUE: 880.623354769720 NO. OF FUNC. EVALS.:25
CUMULATIVE NO. OF FUNC. EVALS.: 546
PARAMETER: -5.8994E-01 -6.7701E-01 -3.2709E-01 -9.6103E-01 1.8861E-02 1.2701E+00 -7.4618E+00 -3.2299E-01 -3.4941E-01 -2.1036E+00
-4.4500E+00 -4.5686E-02 -5.0118E-01 1.1273E-01 -1.8886E+00
GRADIENT: -1.6304E+00 8.2636E-01 2.2630E-01 5.7900E-01 1.4838E+00 5.2953E+00 2.1984E-01 3.0935E-01 5.3338E+00 8.2833E-02
1.3063E-03 1.0733E+00 -8.6079E-01 3.7406E+00 -5.8702E-01
0ITERATION NO.: 32 OBJECTIVE VALUE: 880.621590939717 NO. OF FUNC. EVALS.:26
CUMULATIVE NO. OF FUNC. EVALS.: 572
PARAMETER: -5.8909E-01 -6.7615E-01 -3.2623E-01 -9.6017E-01 1.8846E-02 1.2700E+00 -7.4618E+00 -3.2285E-01 -3.4975E-01 -2.1049E+00
-4.4506E+00 -4.5710E-02 -5.0114E-01 1.1272E-01 -1.8886E+00
GRADIENT: -1.6282E+00 8.2603E-01 2.2691E-01 5.7659E-01 1.4770E+00 5.2831E+00 2.1924E-01 3.0801E-01 5.3260E+00 8.2629E-02
1.3045E-03 1.0724E+00 -8.5847E-01 3.7364E+00 -5.8613E-01
0ITERATION NO.: 33 OBJECTIVE VALUE: 880.163421640069 NO. OF FUNC. EVALS.:51
CUMULATIVE NO. OF FUNC. EVALS.: 623 RESET HESSIAN, TYPE I
PARAMETER: -5.8938E-01 -6.7581E-01 -3.2607E-01 -9.6065E-01 1.8896E-02 1.2707E+00 -7.4655E+00 -3.2882E-01 -5.0682E-01 -2.6379E+00
-4.4595E+00 -4.5660E-02 -5.0139E-01 1.1278E-01 -1.7707E+00
GRADIENT: 2.6787E+00 5.3413E+00 3.9712E-01 4.8155E-01 1.2542E+00 2.6492E+02 -6.7101E-02 -4.2020E+00 5.9947E-01 2.8994E-02
1.2892E-03 1.1210E+00 -4.7982E-01 6.3819E+00 8.2613E-01
0ITERATION NO.: 34 OBJECTIVE VALUE: 879.963671598107 NO. OF FUNC. EVALS.:12
CUMULATIVE NO. OF FUNC. EVALS.: 635
PARAMETER: -5.8939E-01 -6.7580E-01 -3.2606E-01 -9.6067E-01 1.8898E-02 1.2705E+00 -7.4657E+00 -2.5986E-01 -5.2865E-01 -2.8210E+00
-4.4688E+00 -4.5658E-02 -5.0140E-01 1.1278E-01 -1.9086E+00
GRADIENT: 3.8735E+00 5.7430E+00 6.0220E-01 -1.1932E+00 1.2649E+00 3.4705E+02 5.6007E-02 -5.3663E-01 2.0199E+00 1.9527E-02
1.1664E-03 1.1405E+00 -8.5794E-01 3.3182E+00 -6.6357E-01
0ITERATION NO.: 35 OBJECTIVE VALUE: 879.864522338787 NO. OF FUNC. EVALS.:12
CUMULATIVE NO. OF FUNC. EVALS.: 647
PARAMETER: -5.8940E-01 -6.7579E-01 -3.2606E-01 -9.6068E-01 1.8899E-02 1.2703E+00 -7.4657E+00 -2.2370E-01 -5.7403E-01 -2.9773E+00
-4.4785E+00 -4.5657E-02 -5.0141E-01 1.1278E-01 -1.8881E+00

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GRADIENT: 4.0818E+00 5.8845E+00 7.1994E-01 -1.6898E+00 1.3394E+00 3.3344E+02 6.2924E-02 8.1501E-01 1.9792E+00 1.4285E-02
1.1187E-03 1.1114E+00 -8.7465E-01 3.8619E+00 -4.6448E-01
0ITERATION NO.: 36 OBJECTIVE VALUE: 879.818419610507 NO. OF FUNC. EVALS.:12
CUMULATIVE NO. OF FUNC. EVALS.: 659
PARAMETER: -5.8940E-01 -6.7579E-01 -3.2605E-01 -9.6069E-01 1.8899E-02 1.2702E+00 -7.4658E+00 -2.1244E-01 -6.0438E-01 -3.0643E+00
-4.4848E+00 -4.5657E-02 -5.0141E-01 1.1278E-01 -1.8875E+00
GRADIENT: 4.2334E+00 5.9339E+00 7.8379E-01 -1.9587E+00 1.3339E+00 3.3292E+02 4.0042E-02 9.2756E-01 1.7033E+00 1.1985E-02
1.0845E-03 1.1170E+00 -9.1005E-01 3.8065E+00 -4.5771E-01
0ITERATION NO.: 37 OBJECTIVE VALUE: 879.808475565273 NO. OF FUNC. EVALS.:13
CUMULATIVE NO. OF FUNC. EVALS.: 672
PARAMETER: -5.8940E-01 -6.7579E-01 -3.2605E-01 -9.6069E-01 1.8900E-02 1.2702E+00 -7.4658E+00 -2.1018E-01 -6.1126E-01 -3.0850E+00
-4.4866E+00 -4.5657E-02 -5.0141E-01 1.1278E-01 -1.8860E+00
GRADIENT: 4.2579E+00 5.9410E+00 7.9691E-01 -2.0056E+00 1.3345E+00 3.3195E+02 3.4533E-02 9.3730E-01 1.6401E+00 1.1498E-02
1.0769E-03 1.1180E+00 -9.1759E-01 3.8242E+00 -4.4364E-01
0ITERATION NO.: 38 OBJECTIVE VALUE: 879.803143833798 NO. OF FUNC. EVALS.:14
CUMULATIVE NO. OF FUNC. EVALS.: 686
PARAMETER: -5.8940E-01 -6.7579E-01 -3.2605E-01 -9.6069E-01 1.8900E-02 1.2701E+00 -7.4658E+00 -2.0902E-01 -6.1510E-01 -3.0970E+00
-4.4877E+00 -4.5656E-02 -5.0141E-01 1.1278E-01 -1.8853E+00
GRADIENT: 4.2720E+00 5.9445E+00 8.0417E-01 -2.0314E+00 1.3349E+00 3.3149E+02 3.1237E-02 9.3614E-01 1.6036E+00 1.1226E-02
1.0723E-03 1.1189E+00 -9.2317E-01 3.8303E+00 -4.3704E-01
0ITERATION NO.: 39 OBJECTIVE VALUE: 879.803143833798 NO. OF FUNC. EVALS.:26
CUMULATIVE NO. OF FUNC. EVALS.: 712
PARAMETER: -5.8940E-01 -6.7579E-01 -3.2605E-01 -9.6069E-01 1.8900E-02 1.2701E+00 -7.4658E+00 -2.0902E-01 -6.1510E-01 -3.0970E+00
-4.4877E+00 -4.5656E-02 -5.0141E-01 1.1278E-01 -1.8853E+00
GRADIENT: -2.8943E-01 1.9455E+00 7.4696E-01 -2.4018E+00 1.2204E+00 5.2624E+00 -6.5728E-02 9.3614E-01 1.6036E+00 1.1226E-02
1.0723E-03 1.1189E+00 -9.2317E-01 3.7396E+00 -4.7421E-01
0ITERATION NO.: 40 OBJECTIVE VALUE: 879.734959318032 NO. OF FUNC. EVALS.:48
CUMULATIVE NO. OF FUNC. EVALS.: 760 RESET HESSIAN, TYPE I
PARAMETER: -5.8970E-01 -6.7545E-01 -3.2589E-01 -9.6117E-01 1.8950E-02 1.2708E+00 -7.4695E+00 -2.2147E-01 -7.2268E-01 -4.7800E+00
-4.4967E+00 -4.5607E-02 -5.0166E-01 1.1284E-01 -1.7901E+00
GRADIENT: 3.5654E+00 6.2270E+00 9.0092E-01 -1.8051E+00 1.1383E+00 2.7572E+02 -1.9325E-01 -2.5081E+00 -1.5533E-01 0.0000E+00
1.0568E-03 1.1252E+00 -6.0055E-01 5.7053E+00 6.2793E-01
0ITERATION NO.: 41 OBJECTIVE VALUE: 879.693666861389 NO. OF FUNC. EVALS.:12
CUMULATIVE NO. OF FUNC. EVALS.: 772
PARAMETER: -5.8970E-01 -6.7544E-01 -3.2589E-01 -9.6117E-01 1.8950E-02 1.2706E+00 -7.4696E+00 -2.0049E-01 -7.1734E-01 -4.7999E+00
-4.5031E+00 -4.5606E-02 -5.0166E-01 1.1284E-01 -1.8699E+00
GRADIENT: 4.1145E+00 6.5205E+00 1.0742E+00 -2.7415E+00 1.1079E+00 3.2216E+02 -1.2026E-01 -6.6715E-01 3.8593E-01 0.0000E+00
9.9145E-04 1.1558E+00 -8.2461E-01 3.8668E+00 -2.7939E-01
0ITERATION NO.: 42 OBJECTIVE VALUE: 879.690064303660 NO. OF FUNC. EVALS.:12
CUMULATIVE NO. OF FUNC. EVALS.: 784
PARAMETER: -5.8970E-01 -6.7544E-01 -3.2589E-01 -9.6117E-01 1.8950E-02 1.2705E+00 -7.4696E+00 -1.9172E-01 -7.2402E-01 -4.8076E+00
-4.5078E+00 -4.5606E-02 -5.0166E-01 1.1284E-01 -1.8749E+00
GRADIENT: 4.1942E+00 6.5789E+00 1.1172E+00 -2.9194E+00 1.1303E+00 3.2529E+02 -1.0343E-01 -1.0492E-01 4.9867E-01 0.0000E+00
0.0000E+00 1.1523E+00 -8.6144E-01 3.7614E+00 -3.3588E-01
0ITERATION NO.: 43 OBJECTIVE VALUE: 879.688159485434 NO. OF FUNC. EVALS.:12
CUMULATIVE NO. OF FUNC. EVALS.: 796
PARAMETER: -5.8971E-01 -6.7544E-01 -3.2589E-01 -9.6118E-01 1.8951E-02 1.2703E+00 -7.4696E+00 -1.8138E-01 -7.4169E-01 -4.8196E+00
-4.5074E+00 -4.5605E-02 -5.0167E-01 1.1284E-01 -1.8840E+00
GRADIENT: 4.3338E+00 6.6495E+00 1.1887E+00 -3.1946E+00 1.1428E+00 3.3096E+02 -9.7319E-02 3.7300E-01 5.2233E-01 0.0000E+00
0.0000E+00 1.1573E+00 -9.2853E-01 3.5052E+00 -4.3311E-01
0ITERATION NO.: 44 OBJECTIVE VALUE: 879.687976897724 NO. OF FUNC. EVALS.:13
CUMULATIVE NO. OF FUNC. EVALS.: 809
PARAMETER: -5.8971E-01 -6.7544E-01 -3.2589E-01 -9.6118E-01 1.8951E-02 1.2702E+00 -7.4696E+00 -1.7649E-01 -7.5083E-01 -4.8260E+00
-4.5085E+00 -4.5605E-02 -5.0167E-01 1.1284E-01 -1.8864E+00
GRADIENT: 4.3887E+00 6.6788E+00 1.2218E+00 -3.3108E+00 1.1524E+00 3.3236E+02 -9.5029E-02 5.9068E-01 5.2655E-01 0.0000E+00
0.0000E+00 1.1591E+00 -9.6124E-01 3.4301E+00 -4.5942E-01

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OITERATION NO.: 45 OBJECTIVE VALUE: 879.687976078009 NO. OF FUNC. EVALS.:17
CUMULATIVE NO. OF FUNC. EVALS.: 826
PARAMETER: -5.8971E-01 -6.7544E-01 -3.2589E-01 -9.6118E-01 1.8951E-02 1.2702E+00 -7.4696E+00 -1.7632E-01 -7.5120E-01 -4.8262E+00
-4.5086E+00 -4.5605E-02 -5.0167E-01 1.1284E-01 -1.8864E+00
GRADIENT: 4.3905E+00 6.6801E+00 1.2231E+00 -3.3152E+00 1.1526E+00 3.3241E+02 -9.4999E-02 5.9782E-01 5.2634E-01 0.0000E+00
0.0000E+00 1.1592E+00 -9.6261E-01 3.4274E+00 -4.6032E-01
OITERATION NO.: 46 OBJECTIVE VALUE: 879.687970758589 NO. OF FUNC. EVALS.:15
CUMULATIVE NO. OF FUNC. EVALS.: 841
PARAMETER: -5.8971E-01 -6.7544E-01 -3.2589E-01 -9.6118E-01 1.8951E-02 1.2702E+00 -7.4696E+00 -1.7455E-01 -7.5508E-01 -4.8292E+00
-4.5098E+00 -4.5605E-02 -5.0167E-01 1.1284E-01 -1.8871E+00
GRADIENT: 4.4106E+00 6.6898E+00 1.2360E+00 -3.3577E+00 1.1570E+00 3.3277E+02 -9.4888E-02 6.6662E-01 5.2234E-01 0.0000E+00
0.0000E+00 1.1605E+00 -9.7839E-01 3.4027E+00 -4.6796E-01
OITERATION NO.: 47 OBJECTIVE VALUE: 879.687970758589 NO. OF FUNC. EVALS.:27
CUMULATIVE NO. OF FUNC. EVALS.: 868
PARAMETER: -5.8971E-01 -6.7544E-01 -3.2589E-01 -9.6118E-01 1.8951E-02 1.2702E+00 -7.4696E+00 -1.7455E-01 -7.5508E-01 -4.8292E+00
-4.5098E+00 -4.5605E-02 -5.0167E-01 1.1284E-01 -1.8871E+00
GRADIENT: -1.4641E-01 2.6995E+00 1.1788E+00 -3.7306E+00 1.0427E+00 5.3571E+00 -1.9208E-01 6.6662E-01 5.2234E-01 0.0000E+00
0.0000E+00 1.1605E+00 -9.7839E-01 3.3119E+00 -5.0527E-01
OITERATION NO.: 48 OBJECTIVE VALUE: 879.685509833175 NO. OF FUNC. EVALS.:21
CUMULATIVE NO. OF FUNC. EVALS.: 889
PARAMETER: -5.8971E-01 -6.7544E-01 -3.2589E-01 -9.6118E-01 1.8951E-02 1.2701E+00 -7.4696E+00 -1.7300E-01 -7.5968E-01 -4.8311E+00
-4.5112E+00 -4.5605E-02 -5.0167E-01 1.1284E-01 -1.8838E+00
GRADIENT: -1.4612E-01 2.6985E+00 1.1857E+00 -3.7368E+00 1.0499E+00 5.1605E+00 -1.9348E-01 7.0155E-01 5.0746E-01 0.0000E+00
0.0000E+00 1.1592E+00 -9.8264E-01 3.3792E+00 -4.7480E-01
OITERATION NO.: 49 OBJECTIVE VALUE: 879.683308221046 NO. OF FUNC. EVALS.:21
CUMULATIVE NO. OF FUNC. EVALS.: 910
PARAMETER: -5.8971E-01 -6.7544E-01 -3.2589E-01 -9.6118E-01 1.8951E-02 1.2701E+00 -7.4696E+00 -1.7235E-01 -7.6319E-01 -4.8317E+00
-4.5124E+00 -4.5605E-02 -5.0167E-01 1.1284E-01 -1.8815E+00
GRADIENT: -1.4657E-01 2.6938E+00 1.1892E+00 -3.7352E+00 1.0521E+00 5.0320E+00 -1.9620E-01 6.8437E-01 4.8588E-01 0.0000E+00
0.0000E+00 1.1587E+00 -9.8254E-01 3.4235E+00 -4.5211E-01
OITERATION NO.: 50 OBJECTIVE VALUE: 879.682204380636 NO. OF FUNC. EVALS.:22
CUMULATIVE NO. OF FUNC. EVALS.: 932
PARAMETER: -5.8971E-01 -6.7544E-01 -3.2589E-01 -9.6118E-01 1.8951E-02 1.2701E+00 -7.4696E+00 -1.7209E-01 -7.6494E-01 -4.8320E+00
-4.5130E+00 -4.5605E-02 -5.0167E-01 1.1284E-01 -1.8803E+00
GRADIENT: -1.4669E-01 2.6908E+00 1.1908E+00 -3.7336E+00 1.0530E+00 4.9702E+00 -1.9775E-01 6.7056E-01 4.7399E-01 0.0000E+00
0.0000E+00 1.1585E+00 -9.8217E-01 3.4446E+00 -4.4091E-01
OITERATION NO.: 51 OBJECTIVE VALUE: 879.681671762113 NO. OF FUNC. EVALS.:23
CUMULATIVE NO. OF FUNC. EVALS.: 955
PARAMETER: -5.8971E-01 -6.7544E-01 -3.2589E-01 -9.6118E-01 1.8951E-02 1.2701E+00 -7.4696E+00 -1.7197E-01 -7.6580E-01 -4.8321E+00
-4.5133E+00 -4.5605E-02 -5.0167E-01 1.1284E-01 -1.8798E+00
GRADIENT: -1.4711E-01 2.6896E+00 1.1916E+00 -3.7328E+00 1.0531E+00 4.9409E+00 -1.9853E-01 6.6328E-01 4.6802E-01 0.0000E+00
0.0000E+00 1.1584E+00 -9.8196E-01 3.4547E+00 -4.3550E-01
OITERATION NO.: 52 OBJECTIVE VALUE: 879.677797607109 NO. OF FUNC. EVALS.:47
CUMULATIVE NO. OF FUNC. EVALS.: 1002 RESET HESSIAN, TYPE I
PARAMETER: -5.9000E-01 -6.7510E-01 -3.2572E-01 -9.6166E-01 1.9001E-02 1.2707E+00 -7.4734E+00 -1.7986E-01 -8.2184E-01 -4.8321E+00
-4.5133E+00 -4.5555E-02 -5.0192E-01 1.1290E-01 -1.7919E+00
GRADIENT: 3.5216E+00 6.9875E+00 1.2666E+00 -2.8983E+00 1.0881E+00 2.7674E+02 -2.1437E-01 -1.1958E+00 -1.7810E-01 0.0000E+00
0.0000E+00 1.1247E+00 -6.7493E-01 5.5477E+00 5.8101E-01
OITERATION NO.: 53 OBJECTIVE VALUE: 879.660750483416 NO. OF FUNC. EVALS.:13
CUMULATIVE NO. OF FUNC. EVALS.: 1015
PARAMETER: -5.9000E-01 -6.7510E-01 -3.2572E-01 -9.6166E-01 1.9001E-02 1.2706E+00 -7.4734E+00 -1.7439E-01 -8.1387E-01 -4.8321E+00
-4.5133E+00 -4.5555E-02 -5.0192E-01 1.1290E-01 -1.8372E+00
GRADIENT: 3.8052E+00 7.1556E+00 1.3638E+00 -3.3998E+00 1.0470E+00 3.0236E+02 -1.8603E-01 -5.2392E-01 -6.6409E-03 0.0000E+00
0.0000E+00 1.1531E+00 -8.0707E-01 4.4840E+00 4.8289E-02
OITERATION NO.: 54 OBJECTIVE VALUE: 879.660586465417 NO. OF FUNC. EVALS.:12
CUMULATIVE NO. OF FUNC. EVALS.: 1027

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PARAMETER: -5.9000E-01 -6.7510E-01 -3.2572E-01 -9.6166E-01 1.9001E-02 1.2706E+00 -7.4734E+00 -1.7339E-01 -8.1320E-01 -4.8321E+00
-4.5133E+00 -4.5555E-02 -5.0192E-01 1.1290E-01 -1.8416E+00
GRADIENT: 3.8341E+00 7.1751E+00 1.3747E+00 -3.4545E+00 1.0463E+00 3.0495E+02 -1.8189E-01 -4.2055E-01 1.8282E-02 0.0000E+00
0.0000E+00 1.1554E+00 -8.2342E-01 4.3838E+00 -1.0094E-03
0ITERATION NO.: 55 OBJECTIVE VALUE: 879.660586465417 NO. OF FUNC. EVALS.:23
CUMULATIVE NO. OF FUNC. EVALS.: 1050
PARAMETER: -5.9000E-01 -6.7510E-01 -3.2572E-01 -9.6166E-01 1.9001E-02 1.2706E+00 -7.4734E+00 -1.7339E-01 -8.1320E-01 -4.8321E+00
-4.5133E+00 -4.5555E-02 -5.0192E-01 1.1290E-01 -1.8416E+00
GRADIENT: -6.9658E-01 3.2027E+00 1.3178E+00 -3.8226E+00 9.3221E-01 3.6197E+00 -2.7917E-01 -4.2055E-01 1.8282E-02 0.0000E+00
0.0000E+00 1.1554E+00 -8.2342E-01 4.2933E+00 -3.9065E-02
0ITERATION NO.: 56 OBJECTIVE VALUE: 879.659569000943 NO. OF FUNC. EVALS.:23
CUMULATIVE NO. OF FUNC. EVALS.: 1073
PARAMETER: -5.9000E-01 -6.7510E-01 -3.2572E-01 -9.6166E-01 1.9002E-02 1.2706E+00 -7.4734E+00 -1.6879E-01 -8.1530E-01 -4.8321E+00
-4.5133E+00 -4.5555E-02 -5.0192E-01 1.1290E-01 -1.8399E+00
GRADIENT: -6.8389E-01 3.2242E+00 1.3311E+00 -3.8702E+00 9.5251E-01 3.5245E+00 -2.6652E-01 -6.6554E-02 9.0538E-02 0.0000E+00
0.0000E+00 1.1483E+00 -8.2681E-01 4.3562E+00 -2.4245E-02
0ITERATION NO.: 57 OBJECTIVE VALUE: 879.658735765489 NO. OF FUNC. EVALS.:21
CUMULATIVE NO. OF FUNC. EVALS.: 1094
PARAMETER: -5.9001E-01 -6.7510E-01 -3.2572E-01 -9.6166E-01 1.9002E-02 1.2706E+00 -7.4734E+00 -1.6310E-01 -8.3257E-01 -4.8321E+00
-4.5133E+00 -4.5555E-02 -5.0192E-01 1.1290E-01 -1.8418E+00
GRADIENT: -6.0865E-01 3.2431E+00 1.3764E+00 -4.0096E+00 9.5165E-01 3.5791E+00 -2.6943E-01 1.0237E-01 6.5803E-02 0.0000E+00
0.0000E+00 1.1493E+00 -8.4117E-01 4.2472E+00 -5.0189E-02
0ITERATION NO.: 58 OBJECTIVE VALUE: 879.658215876469 NO. OF FUNC. EVALS.:21
CUMULATIVE NO. OF FUNC. EVALS.: 1115
PARAMETER: -5.9000E-01 -6.7510E-01 -3.2572E-01 -9.6166E-01 1.9002E-02 1.2706E+00 -7.4734E+00 -1.6070E-01 -8.4478E-01 -4.8321E+00
-4.5133E+00 -4.5555E-02 -5.0192E-01 1.1290E-01 -1.8376E+00
GRADIENT: -5.9203E-01 3.2307E+00 1.3921E+00 -4.0295E+00 9.5184E-01 3.4184E+00 -2.7636E-01 8.1762E-02 2.1818E-02 0.0000E+00
0.0000E+00 1.1469E+00 -8.3036E-01 4.2971E+00 -7.2619E-03
0ITERATION NO.: 59 OBJECTIVE VALUE: 879.639333330284 NO. OF FUNC. EVALS.:47
CUMULATIVE NO. OF FUNC. EVALS.: 1162 RESET HESSIAN, TYPE I
PARAMETER: -5.8989E-01 -6.7583E-01 -3.2743E-01 -9.5999E-01 1.8694E-02 1.2706E+00 -7.4638E+00 -1.6080E-01 -8.4515E-01 -4.8321E+00
-4.5133E+00 -4.7974E-02 -5.0139E-01 1.1206E-01 -1.8375E+00
GRADIENT: 4.5410E+00 5.7770E+00 8.9451E-01 -2.2802E+00 1.1043E+00 3.0286E+02 -1.4178E-01 6.4047E-02 2.9902E-02 0.0000E+00
0.0000E+00 9.5231E-01 -7.0356E-01 3.1008E+00 3.4963E-02
0ITERATION NO.: 60 OBJECTIVE VALUE: 879.633814511405 NO. OF FUNC. EVALS.:12
CUMULATIVE NO. OF FUNC. EVALS.: 1174
PARAMETER: -5.9028E-01 -6.7641E-01 -3.2804E-01 -9.5943E-01 1.8528E-02 1.2706E+00 -7.4608E+00 -1.6084E-01 -8.4538E-01 -4.8321E+00
-4.5133E+00 -4.8989E-02 -5.0117E-01 1.1173E-01 -1.8376E+00
GRADIENT: 4.5862E+00 5.2709E+00 7.3712E-01 -1.6539E+00 1.0712E+00 3.0302E+02 -1.3397E-01 5.1226E-02 3.1784E-02 0.0000E+00
0.0000E+00 8.7610E-01 -6.5960E-01 2.5724E+00 3.6755E-02
0ITERATION NO.: 61 OBJECTIVE VALUE: 879.633814511405 NO. OF FUNC. EVALS.:25
CUMULATIVE NO. OF FUNC. EVALS.: 1199
PARAMETER: -5.9028E-01 -6.7641E-01 -3.2804E-01 -9.5943E-01 1.8528E-02 1.2706E+00 -7.4608E+00 -1.6084E-01 -8.4538E-01 -4.8321E+00
-4.5133E+00 -4.8989E-02 -5.0117E-01 1.1173E-01 -1.8376E+00
GRADIENT: 5.5108E-02 1.2843E+00 6.7941E-01 -2.0175E+00 9.5678E-01 3.8683E+00 -2.3114E-01 5.1226E-02 3.1784E-02 0.0000E+00
0.0000E+00 8.7610E-01 -6.5960E-01 2.4826E+00 -1.3766E-03
0ITERATION NO.: 62 OBJECTIVE VALUE: 879.633700510717 NO. OF FUNC. EVALS.:56
CUMULATIVE NO. OF FUNC. EVALS.: 1255 RESET HESSIAN, TYPE I
PARAMETER: -5.9028E-01 -6.7641E-01 -3.2804E-01 -9.5944E-01 1.8528E-02 1.2706E+00 -7.4608E+00 -1.6085E-01 -8.4539E-01 -4.8321E+00
-4.5133E+00 -4.9112E-02 -5.0117E-01 1.1173E-01 -1.8376E+00
GRADIENT: 4.5859E+00 5.2716E+00 7.3678E-01 -1.6539E+00 1.0706E+00 3.0302E+02 -1.3377E-01 5.1271E-02 3.1649E-02 0.0000E+00
0.0000E+00 8.6926E-01 -6.5944E-01 2.5696E+00 3.6851E-02
0ITERATION NO.: 63 OBJECTIVE VALUE: 879.633700510717 NO. OF FUNC. EVALS.:26
CUMULATIVE NO. OF FUNC. EVALS.: 1281
PARAMETER: -5.9028E-01 -6.7641E-01 -3.2804E-01 -9.5944E-01 1.8528E-02 1.2706E+00 -7.4608E+00 -1.6085E-01 -8.4539E-01 -4.8321E+00
-4.5133E+00 -4.9112E-02 -5.0117E-01 1.1173E-01 -1.8376E+00

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GRADIENT: 5.4776E-02 1.2850E+00 6.7907E-01 -2.0176E+00 9.5613E-01 3.8706E+00 -2.3094E-01 5.1271E-02 3.1649E-02 0.0000E+00
0.0000E+00 8.6926E-01 -6.5944E-01 2.4799E+00 -1.2807E-03
0ITERATION NO.: 64 OBJECTIVE VALUE: 879.629974483924 NO. OF FUNC. EVALS.:49
CUMULATIVE NO. OF FUNC. EVALS.: 1330 RESET HESSIAN, TYPE I
PARAMETER: -5.9087E-01 -6.7573E-01 -3.2771E-01 -9.6039E-01 1.8628E-02 1.2719E+00 -7.4682E+00 -1.6205E-01 -8.5480E-01 -4.8321E+00
-4.5133E+00 -4.9012E-02 -5.0167E-01 1.1184E-01 -1.8374E+00
GRADIENT: 3.6724E+00 6.5923E+00 1.0008E+00 -2.3259E+00 8.2086E-01 3.0417E+02 -1.7584E-01 -2.3768E-01 -6.4442E-02 0.0000E+00
0.0000E+00 8.7243E-01 -4.4618E-01 2.8085E+00 3.6557E-02
0ITERATION NO.: 65 OBJECTIVE VALUE: 879.629974483924 NO. OF FUNC. EVALS.:21
CUMULATIVE NO. OF FUNC. EVALS.: 1351
PARAMETER: -5.9087E-01 -6.7573E-01 -3.2771E-01 -9.6039E-01 1.8628E-02 1.2719E+00 -7.4682E+00 -1.6205E-01 -8.5480E-01 -4.8321E+00
-4.5133E+00 -4.9012E-02 -5.0167E-01 1.1184E-01 -1.8374E+00
GRADIENT: -8.6296E-01 2.6118E+00 9.4328E-01 -2.6908E+00 7.0650E-01 4.8179E+00 -2.7318E-01 -2.3768E-01 -6.4442E-02 0.0000E+00
0.0000E+00 8.7243E-01 -4.4618E-01 2.7187E+00 -1.6002E-03
0ITERATION NO.: 66 OBJECTIVE VALUE: 879.629815460037 NO. OF FUNC. EVALS.:21
CUMULATIVE NO. OF FUNC. EVALS.: 1372
PARAMETER: -5.9087E-01 -6.7573E-01 -3.2771E-01 -9.6039E-01 1.8628E-02 1.2719E+00 -7.4682E+00 -1.5962E-01 -8.4510E-01 -4.8321E+00
-4.5133E+00 -4.9012E-02 -5.0167E-01 1.1184E-01 -1.8373E+00
GRADIENT: -8.7945E-01 2.6409E+00 9.3626E-01 -2.6965E+00 7.2905E-01 4.8070E+00 -2.5297E-01 1.5591E-01 4.7732E-02 0.0000E+00
0.0000E+00 8.6419E-01 -4.4639E-01 2.7942E+00 -2.3181E-03
0ITERATION NO.: 67 OBJECTIVE VALUE: 879.629657327285 NO. OF FUNC. EVALS.:21
CUMULATIVE NO. OF FUNC. EVALS.: 1393
PARAMETER: -5.9087E-01 -6.7573E-01 -3.2771E-01 -9.6039E-01 1.8628E-02 1.2719E+00 -7.4682E+00 -1.6044E-01 -8.4881E-01 -4.8321E+00
-4.5133E+00 -4.9012E-02 -5.0167E-01 1.1184E-01 -1.8372E+00
GRADIENT: -8.7303E-01 2.6292E+00 9.3877E-01 -2.6937E+00 7.2156E-01 4.8024E+00 -2.6030E-01 1.5189E-02 6.5651E-03 0.0000E+00
0.0000E+00 8.6711E-01 -4.4671E-01 2.7705E+00 -2.4241E-04
0ITERATION NO.: 68 OBJECTIVE VALUE: 879.582124027090 NO. OF FUNC. EVALS.:30
CUMULATIVE NO. OF FUNC. EVALS.: 1423 RESET HESSIAN, TYPE II
PARAMETER: -5.8996E-01 -6.7825E-01 -3.3251E-01 -9.5575E-01 1.7586E-02 1.2812E+00 -7.4304E+00 -1.6051E-01 -8.4946E-01 -4.8321E+00
-4.5133E+00 -4.9012E-02 -5.0167E-01 1.0970E-01 -1.8371E+00
GRADIENT: 6.2139E+00 1.9394E+00 -6.7419E-01 1.4899E+00 3.9664E-01 3.1516E+02 -5.2549E-03 1.7815E-02 3.8277E-02 0.0000E+00
0.0000E+00 3.9168E-01 2.0696E+00 -9.1422E-01 6.9128E-02
0ITERATION NO.: 69 OBJECTIVE VALUE: 879.581853347529 NO. OF FUNC. EVALS.:12
CUMULATIVE NO. OF FUNC. EVALS.: 1435
PARAMETER: -5.8998E-01 -6.7826E-01 -3.3251E-01 -9.5575E-01 1.7582E-02 1.2799E+00 -7.4304E+00 -1.6051E-01 -8.4948E-01 -4.8321E+00
-4.5133E+00 -4.9012E-02 -5.0167E-01 1.0970E-01 -1.8371E+00
GRADIENT: 6.1972E+00 1.9489E+00 -6.6190E-01 1.4849E+00 4.6398E-01 3.1359E+02 -5.5029E-03 1.7340E-02 3.8473E-02 0.0000E+00
0.0000E+00 4.3397E-01 1.6913E+00 -8.3558E-01 6.2905E-02
0ITERATION NO.: 70 OBJECTIVE VALUE: 879.581853347529 NO. OF FUNC. EVALS.:25
CUMULATIVE NO. OF FUNC. EVALS.: 1460
PARAMETER: -5.8998E-01 -6.7826E-01 -3.3251E-01 -9.5575E-01 1.7582E-02 1.2799E+00 -7.4304E+00 -1.6051E-01 -8.4948E-01 -4.8321E+00
-4.5133E+00 -4.9012E-02 -5.0167E-01 1.0970E-01 -1.8371E+00
GRADIENT: 1.6607E+00 2.0664E+00 -7.2116E-01 1.1282E+00 3.4888E-01 1.2357E+01 -1.0224E-01 1.7340E-02 3.8473E-02 0.0000E+00
0.0000E+00 4.3397E-01 1.6913E+00 -9.2407E-01 2.4783E-02
0ITERATION NO.: 71 OBJECTIVE VALUE: 879.581530392919 NO. OF FUNC. EVALS.:21
CUMULATIVE NO. OF FUNC. EVALS.: 1481
PARAMETER: -5.9016E-01 -6.7808E-01 -3.3218E-01 -9.5594E-01 1.7452E-02 1.2789E+00 -7.4288E+00 -1.6049E-01 -8.4995E-01 -4.8321E+00
-4.5133E+00 -4.9012E-02 -5.0167E-01 1.0972E-01 -1.8370E+00
GRADIENT: 1.3287E+00 -1.6350E+00 -6.0409E-01 9.1158E-01 3.0206E-01 1.1381E+01 -8.8473E-02 2.0046E-02 3.8106E-02 0.0000E+00
0.0000E+00 4.6746E-01 1.3981E+00 -7.8716E-01 2.1208E-02
0ITERATION NO.: 72 OBJECTIVE VALUE: 879.573195468427 NO. OF FUNC. EVALS.:44
CUMULATIVE NO. OF FUNC. EVALS.: 1525 RESET HESSIAN, TYPE I
PARAMETER: -5.9138E-01 -6.7669E-01 -3.2907E-01 -9.5729E-01 1.7028E-02 1.2801E+00 -7.4177E+00 -1.6059E-01 -8.5242E-01 -4.8321E+00
-4.5133E+00 -5.4370E-02 -5.0477E-01 1.1030E-01 -1.8384E+00
GRADIENT: 3.4538E+00 5.5548E+00 2.9297E-01 -3.3936E-01 -2.8985E-01 3.1373E+02 1.2397E-01 4.9730E-02 3.7610E-02 0.0000E+00
0.0000E+00 1.6005E-01 1.0129E+00 2.2293E-01 4.2355E-02

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OITERATION NO.: 73 OBJECTIVE VALUE: 879.573195468427 NO. OF FUNC. EVALS.:22
CUMULATIVE NO. OF FUNC. EVALS.: 1547
PARAMETER: -5.9138E-01 -6.7669E-01 -3.2907E-01 -9.5729E-01 1.7028E-02 1.2801E+00 -7.4177E+00 -1.6059E-01 -8.5242E-01 -4.8321E+00
-4.5133E+00 -5.4370E-02 -5.0477E-01 1.1030E-01 -1.8384E+00
GRADIENT: -1.0909E+00 1.5578E+00 2.3475E-01 -7.0044E-01 -4.0478E-01 1.1794E+01 2.7792E-02 4.9730E-02 3.7610E-02 0.0000E+00
0.0000E+00 1.6005E-01 1.0129E+00 1.3407E-01 4.2364E-03
OITERATION NO.: 74 OBJECTIVE VALUE: 879.571207232544 NO. OF FUNC. EVALS.:21
CUMULATIVE NO. OF FUNC. EVALS.: 1568
PARAMETER: -5.8998E-01 -6.7812E-01 -3.3035E-01 -9.5597E-01 1.7680E-02 1.2801E+00 -7.4213E+00 -1.6098E-01 -8.5515E-01 -4.8321E+00
-4.5133E+00 -5.6495E-02 -5.0728E-01 1.1020E-01 -1.8387E+00
GRADIENT: 1.3686E+00 -1.5863E+00 -3.8738E-01 6.0633E-01 5.1878E-02 1.1180E+01 -3.5857E-02 -6.8716E-02 4.2803E-03 0.0000E+00
0.0000E+00 3.1215E-02 4.8215E-01 -3.6082E-01 3.8324E-03
OITERATION NO.: 75 OBJECTIVE VALUE: 879.569234338571 NO. OF FUNC. EVALS.:21
CUMULATIVE NO. OF FUNC. EVALS.: 1589
PARAMETER: -5.9040E-01 -6.7738E-01 -3.2920E-01 -9.5626E-01 1.7877E-02 1.2800E+00 -7.4181E+00 -1.6076E-01 -8.5651E-01 -4.8321E+00
-4.5133E+00 -5.7751E-02 -5.0918E-01 1.1040E-01 -1.8390E+00
GRADIENT: 3.2429E-01 -2.8520E-01 -1.1064E-01 7.2802E-02 -2.6796E-04 1.0660E+01 5.0340E-03 -4.6017E-02 6.1927E-03 0.0000E+00
0.0000E+00 -2.4453E-02 7.4045E-02 8.3047E-02 -3.6023E-03
OITERATION NO.: 76 OBJECTIVE VALUE: 879.569190155387 NO. OF FUNC. EVALS.:21
CUMULATIVE NO. OF FUNC. EVALS.: 1610
PARAMETER: -5.9040E-01 -6.7712E-01 -3.2868E-01 -9.5621E-01 1.7931E-02 1.2800E+00 -7.4191E+00 -1.6041E-01 -8.5727E-01 -4.8321E+00
-4.5133E+00 -5.7595E-02 -5.0951E-01 1.1028E-01 -1.8384E+00
GRADIENT: 8.7486E-02 -5.0248E-02 -6.9637E-03 -2.9015E-02 -4.0675E-02 1.0514E+01 3.9846E-04 -3.1148E-02 5.5388E-03 0.0000E+00
0.0000E+00 -1.2380E-02 3.9338E-03 1.9859E-03 -2.6667E-03
OITERATION NO.: 77 OBJECTIVE VALUE: 879.567975891375 NO. OF FUNC. EVALS.:44
CUMULATIVE NO. OF FUNC. EVALS.: 1654 RESET HESSIAN, TYPE I
PARAMETER: -5.9049E-01 -6.7707E-01 -3.2864E-01 -9.5616E-01 1.8000E-02 1.2845E+00 -7.4192E+00 -1.6012E-01 -8.5796E-01 -4.8321E+00
-4.5133E+00 -5.7401E-02 -5.0953E-01 1.1028E-01 -1.8382E+00
GRADIENT: 4.5218E+00 4.0292E+00 2.2332E-02 3.8482E-01 -1.6286E-01 3.1785E+02 9.9335E-02 -1.7117E-02 5.8634E-03 0.0000E+00
0.0000E+00 -1.4429E-01 1.2530E+00 -1.4987E-01 5.5907E-02
OITERATION NO.: 78 OBJECTIVE VALUE: 879.566288616316 NO. OF FUNC. EVALS.:12
CUMULATIVE NO. OF FUNC. EVALS.: 1666
PARAMETER: -5.9050E-01 -6.7709E-01 -3.2865E-01 -9.5616E-01 1.8001E-02 1.2820E+00 -7.4192E+00 -1.6012E-01 -8.5797E-01 -4.8321E+00
-4.5133E+00 -5.7389E-02 -5.0955E-01 1.1028E-01 -1.8382E+00
GRADIENT: 4.5067E+00 4.0353E+00 4.4085E-02 3.7199E-01 -1.2047E-02 3.1471E+02 9.7647E-02 -1.8153E-02 6.2249E-03 0.0000E+00
0.0000E+00 -6.0751E-02 5.2321E-01 5.1905E-03 4.5093E-02
OITERATION NO.: 79 OBJECTIVE VALUE: 879.566288616316 NO. OF FUNC. EVALS.:26
CUMULATIVE NO. OF FUNC. EVALS.: 1692
PARAMETER: -5.9050E-01 -6.7709E-01 -3.2865E-01 -9.5616E-01 1.8001E-02 1.2820E+00 -7.4192E+00 -1.6012E-01 -8.5797E-01 -4.8321E+00
-4.5133E+00 -5.7389E-02 -5.0955E-01 1.1028E-01 -1.8382E+00
GRADIENT: -3.0807E-02 3.4283E-02 -1.4136E-02 1.1921E-02 -1.2699E-01 1.2319E+01 1.3640E-03 -1.8153E-02 6.2249E-03 0.0000E+00
0.0000E+00 -6.0751E-02 5.2321E-01 -8.3682E-02 6.9936E-03
OITERATION NO.: 80 OBJECTIVE VALUE: 879.564498530661 NO. OF FUNC. EVALS.:45
CUMULATIVE NO. OF FUNC. EVALS.: 1737 RESET HESSIAN, TYPE I
PARAMETER: -5.9043E-01 -6.7716E-01 -3.2849E-01 -9.5620E-01 1.8578E-02 1.2832E+00 -7.4196E+00 -1.5973E-01 -8.5950E-01 -4.8321E+00
-4.5133E+00 -5.6333E-02 -5.1430E-01 1.1042E-01 -1.8394E+00
GRADIENT: 4.6596E+00 3.9181E+00 1.3755E-02 3.6701E-01 2.5828E-02 3.1565E+02 9.3287E-02 -9.6577E-03 2.1147E-03 0.0000E+00
0.0000E+00 -2.6876E-02 -1.6309E-01 2.9132E-01 2.2863E-02
OITERATION NO.: 81 OBJECTIVE VALUE: 879.564498530661 NO. OF FUNC. EVALS.:21
CUMULATIVE NO. OF FUNC. EVALS.: 1758
PARAMETER: -5.9043E-01 -6.7716E-01 -3.2849E-01 -9.5620E-01 1.8578E-02 1.2832E+00 -7.4196E+00 -1.5973E-01 -8.5950E-01 -4.8321E+00
-4.5133E+00 -5.6333E-02 -5.1430E-01 1.1042E-01 -1.8394E+00
GRADIENT: 1.2230E-01 -8.3234E-02 -4.4426E-02 6.6233E-03 -8.9084E-02 1.2179E+01 -2.9915E-03 -9.6577E-03 2.1147E-03 0.0000E+00
0.0000E+00 -2.6876E-02 -1.6309E-01 2.0236E-01 -1.5200E-02
OITERATION NO.: 82 OBJECTIVE VALUE: 879.564435805815 NO. OF FUNC. EVALS.:21
CUMULATIVE NO. OF FUNC. EVALS.: 1779

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PARAMETER: -5.9037E-01 -6.7694E-01 -3.2824E-01 -9.5619E-01 1.8813E-02 1.2831E+00 -7.4187E+00 -1.5962E-01 -8.5985E-01 -4.8321E+00
-4.5133E+00 -5.6151E-02 -5.1348E-01 1.1013E-01 -1.8380E+00
GRADIENT: 5.8157E-04 6.3467E-02 -1.1849E-03 -6.1603E-02 6.6604E-02 1.2280E+01 7.7957E-03 -2.6912E-03 1.6193E-03 0.0000E+00
0.0000E+00 -2.3321E-02 2.6932E-02 -7.5997E-02 -4.9287E-03
0ITERATION NO.: 83 OBJECTIVE VALUE: 879.564181515679 NO. OF FUNC. EVALS.:44
CUMULATIVE NO. OF FUNC. EVALS.: 1823 RESET HESSIAN, TYPE I
PARAMETER: -5.9037E-01 -6.7700E-01 -3.2824E-01 -9.5608E-01 1.8653E-02 1.2838E+00 -7.4198E+00 -1.5960E-01 -8.6007E-01 -4.8321E+00
-4.5133E+00 -5.5898E-02 -5.1361E-01 1.1019E-01 -1.8375E+00
GRADIENT: 4.5736E+00 3.9536E+00 4.6026E-02 3.8429E-01 3.3718E-02 3.1556E+02 9.2267E-02 -1.1588E-02 -9.2115E-04 0.0000E+00
0.0000E+00 -2.9287E-02 1.8081E-01 2.1821E-02 4.2182E-02
0ITERATION NO.: 84 OBJECTIVE VALUE: 879.564181515679 NO. OF FUNC. EVALS.:19
CUMULATIVE NO. OF FUNC. EVALS.: 1842
PARAMETER: -5.9037E-01 -6.7700E-01 -3.2824E-01 -9.5608E-01 1.8653E-02 1.2838E+00 -7.4198E+00 -1.5960E-01 -8.6007E-01 -4.8321E+00
-4.5133E+00 -5.5898E-02 -5.1361E-01 1.1019E-01 -1.8375E+00
GRADIENT: 3.6703E-02 -4.7379E-02 -1.2106E-02 2.4042E-02 -8.1220E-02 1.2907E+01 -4.0448E-03 -1.1588E-02 -9.2115E-04 0.0000E+00
0.0000E+00 -2.9287E-02 1.8081E-01 -6.6969E-02 4.0790E-03
0ITERATION NO.: 85 OBJECTIVE VALUE: 879.564108649701 NO. OF FUNC. EVALS.:21
CUMULATIVE NO. OF FUNC. EVALS.: 1863
PARAMETER: -5.9024E-01 -6.7684E-01 -3.2818E-01 -9.5609E-01 1.8860E-02 1.2838E+00 -7.4189E+00 -1.5953E-01 -8.5998E-01 -4.8321E+00
-4.5133E+00 -5.5610E-02 -5.1424E-01 1.1028E-01 -1.8377E+00
GRADIENT: 2.9027E-02 6.0613E-02 -2.5115E-02 -6.3266E-02 3.2987E-02 1.2695E+01 6.0660E-03 2.7795E-03 2.6230E-03 0.0000E+00
0.0000E+00 -1.0109E-02 4.3665E-02 1.1518E-01 1.1745E-03
0ITERATION NO.: 86 OBJECTIVE VALUE: 879.564056048385 NO. OF FUNC. EVALS.:44
CUMULATIVE NO. OF FUNC. EVALS.: 1907 RESET HESSIAN, TYPE I
PARAMETER: -5.9027E-01 -6.7690E-01 -3.2806E-01 -9.5599E-01 1.8822E-02 1.2840E+00 -7.4198E+00 -1.5952E-01 -8.6031E-01 -4.8321E+00
-4.5133E+00 -5.5535E-02 -5.1445E-01 1.1016E-01 -1.8378E+00
GRADIENT: 4.5797E+00 3.9445E+00 5.0758E-02 3.8204E-01 7.4500E-02 3.1577E+02 9.2384E-02 -8.1277E-03 -1.3649E-03 0.0000E+00
0.0000E+00 -1.4182E-02 6.3161E-02 1.7115E-02 3.6116E-02
0ITERATION NO.: 87 OBJECTIVE VALUE: 879.564056048385 NO. OF FUNC. EVALS.:19
CUMULATIVE NO. OF FUNC. EVALS.: 1926
PARAMETER: -5.9027E-01 -6.7690E-01 -3.2806E-01 -9.5599E-01 1.8822E-02 1.2840E+00 -7.4198E+00 -1.5952E-01 -8.6031E-01 -4.8321E+00
-4.5133E+00 -5.5535E-02 -5.1445E-01 1.1016E-01 -1.8378E+00
GRADIENT: 4.3098E-02 -5.6216E-02 -7.3389E-03 2.1715E-02 -4.0435E-02 1.2873E+01 -3.9312E-03 -8.1277E-03 -1.3649E-03 0.0000E+00
0.0000E+00 -1.4182E-02 6.3161E-02 -7.1650E-02 -1.9801E-03
0ITERATION NO.: 88 OBJECTIVE VALUE: 879.564046215869 NO. OF FUNC. EVALS.:21
CUMULATIVE NO. OF FUNC. EVALS.: 1947
PARAMETER: -5.9020E-01 -6.7680E-01 -3.2803E-01 -9.5599E-01 1.8848E-02 1.2840E+00 -7.4193E+00 -1.5949E-01 -8.6022E-01 -4.8321E+00
-4.5133E+00 -5.5435E-02 -5.1458E-01 1.1021E-01 -1.8377E+00
GRADIENT: 2.8039E-02 1.5174E-02 -1.0907E-02 -3.1047E-02 -2.0145E-02 1.2819E+01 1.3965E-03 -1.0181E-03 6.0874E-04 0.0000E+00
0.0000E+00 -7.9227E-03 3.3630E-02 2.3000E-02 -2.5823E-04
0ITERATION NO.: 89 OBJECTIVE VALUE: 879.564025253494 NO. OF FUNC. EVALS.:44
CUMULATIVE NO. OF FUNC. EVALS.: 1991 RESET HESSIAN, TYPE I
PARAMETER: -5.9024E-01 -6.7684E-01 -3.2789E-01 -9.5589E-01 1.8886E-02 1.2842E+00 -7.4197E+00 -1.5947E-01 -8.6039E-01 -4.8321E+00
-4.5133E+00 -5.5192E-02 -5.1489E-01 1.1018E-01 -1.8376E+00
GRADIENT: 4.5282E+00 3.9656E+00 6.1535E-02 4.0038E-01 7.8286E-02 3.1579E+02 9.2508E-02 -5.8352E-03 -9.3602E-04 0.0000E+00
0.0000E+00 2.4590E-06 2.3786E-02 5.9612E-02 3.8102E-02
0ITERATION NO.: 90 OBJECTIVE VALUE: 879.564025253494 NO. OF FUNC. EVALS.:21
CUMULATIVE NO. OF FUNC. EVALS.: 2012
PARAMETER: -5.9024E-01 -6.7684E-01 -3.2789E-01 -9.5589E-01 1.8886E-02 1.2842E+00 -7.4197E+00 -1.5947E-01 -8.6039E-01 -4.8321E+00
-4.5133E+00 -5.5192E-02 -5.1489E-01 1.1018E-01 -1.8376E+00
GRADIENT: -7.8131E-03 -3.4512E-02 3.4751E-03 4.0109E-02 -3.6645E-02 1.2923E+01 -3.8009E-03 -5.8352E-03 -9.3602E-04 0.0000E+00
0.0000E+00 2.4590E-06 2.3786E-02 -2.9163E-02 5.4339E-06
0ITERATION NO.: 91 OBJECTIVE VALUE: 879.564025253494 NO. OF FUNC. EVALS.:18
CUMULATIVE NO. OF FUNC. EVALS.: 2030
PARAMETER: -5.9024E-01 -6.7684E-01 -3.2789E-01 -9.5589E-01 1.8886E-02 1.2842E+00 -7.4197E+00 -1.5947E-01 -8.6039E-01 -4.8321E+00
-4.5133E+00 -5.5192E-02 -5.1489E-01 1.1018E-01 -1.8376E+00

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GRADIENT: -7.8131E-03 -3.4512E-02 3.4751E-03 4.0109E-02 -3.6645E-02 1.2923E+01 -3.8009E-03 -5.8352E-03 -9.3602E-04 0.0000E+00  
 0.0000E+00 2.4590E-06 2.3786E-02 -2.9163E-02 5.4339E-06  
 Elapsed estimation time in seconds: 81.02

#TERM:

MINIMIZATION SUCCESSFUL  
 HOWEVER, PROBLEMS OCCURRED WITH THE MINIMIZATION.  
 REGARD THE RESULTS OF THE ESTIMATION STEP CAREFULLY, AND ACCEPT THEM ONLY  
 AFTER CHECKING THAT THE COVARIANCE STEP PRODUCES REASONABLE OUTPUT.  
 NO. OF FUNCTION EVALUATIONS USED: 2030  
 NO. OF SIG. DIGITS IN FINAL EST.: 3.2  
 PARAMETER ESTIMATE IS NEAR ITS BOUNDARY  
 THIS MUST BE ADDRESSED BEFORE THE COVARIANCE STEP CAN BE IMPLEMENTED

ETABAR IS THE ARITHMETIC MEAN OF THE ETA-ESTIMATES,  
 AND THE P-VALUE IS GIVEN FOR THE NULL HYPOTHESIS THAT THE TRUE MEAN IS 0.

ETABAR:	1.6148E-03	1.4907E-03	1.1961E-07	-1.4086E-06	1.6870E-02	5.5229E-02	0.0000E+00
SE:	3.6246E-02	9.4148E-03	2.6555E-06	4.3815E-06	3.5443E-02	3.5014E-02	0.0000E+00
P VAL.:	9.6446E-01	8.7419E-01	9.6407E-01	7.4785E-01	6.3409E-01	1.1472E-01	1.0000E+00
ETAshrink(%):	9.5911E+00	5.2666E+01	9.9489E+01	9.9157E+01	2.0347E+01	1.1888E+01	1.0000E+02
EPSshrink(%):	8.2393E+00	8.3075E+00					

#TERE:

1

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*****
*****
***** FIRST ORDER CONDITIONAL ESTIMATION WITH INTERACTION *****
#OBJT:***** MINIMUM VALUE OF OBJECTIVE FUNCTION *****
*****
*****
    
```

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#OBJV:*****
1
*****
*****
***** FIRST ORDER CONDITIONAL ESTIMATION WITH INTERACTION *****
***** FINAL PARAMETER ESTIMATE *****
*****
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THETA - VECTOR OF FIXED EFFECTS PARAMETERS \*\*\*\*\*

TH 1	TH 2	TH 3	TH 4	TH 5	TH 6	TH 7	TH 8
1.50E-01	9.20E-01	6.52E-02	6.96E-01	4.61E-01	3.27E-01	1.00E+00	-7.42E-01

OMEGA - COV MATRIX FOR RANDOM EFFECTS - ETAS \*\*\*\*\*

	ETA1	ETA2	ETA3	ETA4	ETA5	ETA6	ETA7
ETA1 +	5.95E-02						
ETA2 +	0.00E+00	1.46E-02					
ETA3 +	0.00E+00	0.00E+00	1.00E-05				
ETA4 +	0.00E+00	0.00E+00	0.00E+00	1.00E-05			
ETA5 +	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.33E-02		
ETA6 +	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.85E-02	
ETA7 +	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

SIGMA - COV MATRIX FOR RANDOM EFFECTS - EPSILONS \*\*\*\*

EPS1	EPS2



EPS1  
+ 1.02E-01

EPS2  
+ 0.00E+00 2.07E-03

Thu Aug 26 05:33:21 JST 2010