```
****   NAI =  1    NAIM =  1
   ***    NO THRESHOLDS APPLY TO RGEs   ***


                        ***  mu > 0   ***



 *****   INITIAL t =   .000000   FINAL t = 81.691254  *********


************ INITIAL TEST VALUES, a1,2,3 and mt(Mz) in DR bar  *******

   a1(Mz)=   .01695   a2(Mz)=   .03389   a3(Mz)=   .13136


   Mo =   100.000      M1/2 =   100.000    Ao =   100.000
   mt(Mz)=   174.00   Mb(pole)=     5.20 Mtau(pole)=    1.78
   tanb    ,       sin2b =    4.000000   .470588
******************************************************************************




 **  Iter.=  12  MGut=  .33027D+17 a1=  .04253 a2=  .04253 aGUT=  .04253

*** Output values for couplings in this run  *********

***           FINAL t =   67.046351         ***
   a1(Mz)=   .01685   a2(Mz)=   .03347   a3(Mz)=   .12469
   at(Mz)=   .07501   ab(Mz)=   .00064   aL(Mz)=   .00013
*************************************************




*** Output values for couplings after the 6th CALL  *********
                  , Mz-->Mgut

***************    FINAL t =     .000000   *********************
 a1(Mgut)=   .04253   a2(Mgut)=   .04253  a3(Mgut)=   .04253
 at(Mgut)=   .01828   ab(Mgut)=   .00006  aL(Mgut)=   .00006

*************************************************



  mu(Mz)    =       190.473     B(Mz)  =     -64.822

  mu(Mgut)  =       187.877   B(Mgut)  =       3.658


  At(Mgut)  =      100.000  Ab(Mgut)  =     100.000  AL(Mgut)  =     100.000

  M1(Mgut)  =      100.000  M2(Mgut)  =     100.000  M3(Mgut)  =     100.000



****************  INITIAL  VALUES AFTER 6th= INPUTS FOR THE 7th CALL ***********
```



```
********
   a(Mgut)=    .04253

 a1(Mgut)=   .04253   a2(Mgut)=   .04253  a3(Mgut)=   .04253
 at(Mgut)=   .01828   ab(Mgut)=   .00006   aL(Mgut)=   .00006

   Mo =   100.000      M1/2 =   100.000    Ao =   100.000

      B(Mgut) =        3.657827   mu(Mgut)  =      187.877316

******************************************************************************




****** FINAL VALUES ( sin^2 , aem in MS bar as well as all gauge couplings, NOT
YUKAWAS) **********


 *******   t final  ********    67.0463506 ********
       Mgut =   .33027D+17

 sin^2(exp) =  .231189  sin^2(th) =  .232333  sin^2(exp)-sin^2(th) = -.001144
 1/aem =  128.8122sin^2(exp) = .2316-.88 (mt^2-160^2)/10^7

***********************************************************************


   a1(Mz)=   .01685   a2(Mz)=   .03341   a3(Mz)=   .12347

   at(Mz)=   .07501   ab(Mz)=   .00064   aL(Mz)=   .00013

***********************************************************************
   At(Mz) =    267.924   Ab(Mz)=    464.734   Al(Mz)=    165.835

         B(Mz)=    -64.822     Mu(Mz)=     190.473

 DR-> mt(Mz)=   165.94 DR-> mb(Mz)=    3.83 DR-> mtau(Mz)=   1.75
      Mbottom(pole) =      5.20000      Mtau(pole) =      1.77700
   sin2b =   .4705882   sinb =  .9701425  cosb =  .2425356
***********************************************************************
        AVRG MASS =           203.633
            Q3 =     253.027  Q2 =     282.873   Q1 =     282.873

            D3 =     276.305  D2 =     277.064   D1 =     277.064

            U3 =     211.487  U2 =     277.617   U1 =     277.617

            L3 =     120.717  L2 =     120.835   L1 =     120.835

            E3 =     106.214  E2 =     106.486   E1 =     106.486

***********************************************************************

 Below m1,2,3 are   mi=sign(mi^2)*sqrt(mi^2)
 m1=     223.998  m2=     -53.996   m3=    -111.117

 IF det POSITIVE NO EW BREAKING    det =  -1.00

 Value of Mz from  (m1^2-m2^2*tan^2)/(tan^2-1)     91.188


 Gauginos   M1 =      38.134  M2 =      73.934   M3 =     283.883
```

```
 Physical gluino mass  Mg =      268.16126



  ***** PHYSICAL TOP MASS  Mt =     174.00000



 ########## tree level  HIGGS MASSES ###########

     CHARGED   HIGGSES   H+-  =   231.78881
     CP - ODD    HIGGS    A   =   217.39301
     CP - EVEN HIGGSES    Ho  =   222.21393
                          ho  =    78.71477




    *******     NEUTRALINO MASSES    *********

     N1 =    27.16414  N2 =    55.87777     N3 =   231.05947  N4 =  -200.71713


    ********    CHARGINO MASSES      **********

       C1 =   229.94202    C2 =    48.93833


    ********    STOPS        **********

       ST1 =     352.173    ST2 =     153.988


    ********    SBOTTOMS        **********

       SB1 =     269.280    SB2 =     245.300


    ********    SLEPTONS (3d gen.)       **********

       SE3+ =     130.799    SE3- =     111.257
       SN3 =      104.045

**********  REMAINING SQUARKS  **********

     UL =  266.74970   UR =  263.81288
     DL =  277.14454   DR =  266.47280




    ********    SLEPTONS (1+2 gen.)       **********

       SEL =     128.477    SER =     114.267
       SNL =     104.176
```



```
 ### RAD CORRECTED MASSES TO HIGGS #######

  The rad corrections to A are made to vanish by
  a proper choice of the scale

  On the left are the tree masses
     CHARGED   HIGGSES    H+-  =       231.78881  cor =      226.50286
     CP - ODD    HIGGS    A    =       217.39301  cor =      211.89605
     CP - EVEN HIGGSES:   Ho   =       222.21393  cor =      216.65867
                          ho   =        78.71477  cor =       97.40765




 *****   INITIAL t =   .000000   FINAL t = 77.086084  *********


************ INITIAL TEST VALUES, a1,2,3 and mt(Mz) in DR bar  *******

   a1(Mz)=   .01695   a2(Mz)=   .03389   a3(Mz)=   .13136


   Mo =   100.000      M1/2 =   100.000    Ao =   100.000
   mt(Mz)=   174.00   Mb(pole)=     5.20 Mtau(pole)=    1.78
   tanb    ,      sin2b =    4.000000   .470588
*******************************************************************************




 **  Iter.=  17  MGut=  .33027D+17 a1=  .04253 a2=  .04253 aGUT=  .04253

*** Output values for couplings in this run  *********

***            FINAL t =   67.046351         ***
   a1(Mz)=   .01685   a2(Mz)=   .03347   a3(Mz)=   .12469
   at(Mz)=   .07501   ab(Mz)=   .00064   aL(Mz)=   .00013
**************************************************




*** Output values for couplings after the 6th CALL  *********
                  , Mz-->Mgut

***************     FINAL t =     .000000   *********************
 a1(Mgut)=   .04253   a2(Mgut)=   .04253  a3(Mgut)=   .04253
 at(Mgut)=   .01828   ab(Mgut)=   .00006  aL(Mgut)=   .00006

**************************************************



  mu(Mz)    =       190.473     B(Mz) =     -64.822

  mu(Mgut) =       187.877   B(Mgut) =       3.658
```

```
  At(Mgut) =      100.000  Ab(Mgut) =     100.000  AL(Mgut) =     100.000

  M1(Mgut) =      100.000  M2(Mgut) =     100.000  M3(Mgut) =     100.000



****************  INITIAL  VALUES AFTER 6th= INPUTS FOR THE 7th CALL ***********
********
   a(Mgut)=    .04253

 a1(Mgut)=   .04253   a2(Mgut)=   .04253  a3(Mgut)=   .04253
 at(Mgut)=   .01828   ab(Mgut)=   .00006   aL(Mgut)=   .00006

   Mo =   100.000      M1/2 =   100.000    Ao =   100.000

      B(Mgut) =        3.657829   mu(Mgut) =      187.877322

******************************************************************************




****** FINAL VALUES ( sin^2 , aem in MS bar as well as all gauge couplings, NOT
YUKAWAS) **********


 *******   t final  ********    67.0463512 ********
      Mgut =   .33027D+17

 sin^2(exp) =  .231189  sin^2(th) =  .232333  sin^2(exp)-sin^2(th) = -.001144
 1/aem =  128.8122sin^2(exp) = .2316-.88 (mt^2-160^2)/10^7

************************************************************************

   a1(Mz)=   .01685   a2(Mz)=   .03341   a3(Mz)=   .12347

   at(Mz)=   .07501   ab(Mz)=   .00064   aL(Mz)=   .00013

************************************************************************
   At(Mz) =    267.924   Ab(Mz)=    464.734   Al(Mz)=    165.835

         B(Mz)=    -64.822     Mu(Mz)=     190.473

 DR-> mt(Mz)=   165.94 DR-> mb(Mz)=    3.83 DR-> mtau(Mz)=   1.75
      Mbottom(pole) =       5.20000      Mtau(pole) =      1.77700
   sin2b =   .4705882   sinb =  .9701425  cosb =  .2425356
************************************************************************
        AVRG MASS =           203.633
            Q3 =     253.027  Q2 =     282.873   Q1 =     282.873

            D3 =     276.305  D2 =     277.064   D1 =     277.064

            U3 =     211.487  U2 =     277.617   U1 =     277.617

            L3 =     120.717  L2 =     120.835   L1 =     120.835

            E3 =     106.214  E2 =     106.486   E1 =     106.486

************************************************************************

 Below m1,2,3 are   mi=sign(mi^2)*sqrt(mi^2)
 m1=     223.998  m2=     -53.996   m3=    -111.117
```



```
 IF det POSITIVE NO EW BREAKING    det =  -1.00

 Value of Mz from  (m1^2-m2^2*tan^2)/(tan^2-1)     91.188


 Gauginos   M1 =      38.134  M2 =      73.934   M3 =     283.883
 Physical gluino mass  Mg =      268.16126



  ***** PHYSICAL TOP MASS  Mt =     174.00000



 ########## tree level  HIGGS MASSES ###########

     CHARGED   HIGGSES   H+-  =   231.78882
     CP - ODD    HIGGS    A   =   217.39302
     CP - EVEN HIGGSES    Ho  =   222.21394
                          ho  =    78.71477




    *******     NEUTRALINO MASSES    *********

     N1 =    27.16414  N2 =    55.87777     N3 =   231.05947  N4 =  -200.71714



    ********    CHARGINO MASSES      **********

       C1 =   229.94203    C2 =    48.93833



    ********    STOPS        **********

       ST1 =     352.173    ST2 =     153.988



    ********    SBOTTOMS        **********

       SB1 =     269.280    SB2 =     245.300



    ********    SLEPTONS (3d gen.)       **********

       SE3+ =     130.799    SE3- =     111.257
       SN3 =      104.045


**********  REMAINING SQUARKS  **********

     UL =  266.74970   UR =  263.81288
     DL =  277.14454   DR =  266.47281
```

```
   ********    SLEPTONS (1+2 gen.)       **********

      SEL =     128.477    SER =     114.267
      SNL =     104.176



 ### RAD CORRECTED MASSES TO HIGGS #######

  The rad corrections to A are made to vanish by
  a proper choice of the scale

  On the left are the tree masses
     CHARGED   HIGGSES    H+-  =       231.78882  cor =      226.50286
     CP - ODD    HIGGS    A    =       217.39302  cor =      211.89606
     CP - EVEN HIGGSES:   Ho   =       222.21394  cor =      216.65868
                          ho   =        78.71477  cor =       97.40765



                        ***  mu < 0   ***



 *****   INITIAL t =   .000000   FINAL t = 81.691254  *********


************ INITIAL TEST VALUES, a1,2,3 and mt(Mz) in DR bar  *******

   a1(Mz)=   .01695   a2(Mz)=   .03389   a3(Mz)=   .13136


   Mo =   100.000      M1/2 =   100.000    Ao =   100.000
   mt(Mz)=   174.00   Mb(pole)=     5.20 Mtau(pole)=    1.78
   tanb    ,      sin2b =     4.000000   .470588
******************************************************************************



 **  Iter.=  12  MGut=  .48967D+17 a1=  .04302 a2=  .04302 aGUT=  .04302

*** Output values for couplings in this run  *********

***           FINAL t =   67.834009         ***
   a1(Mz)=   .01680   a2(Mz)=   .03365   a3(Mz)=   .13174
   at(Mz)=   .07526   ab(Mz)=   .00067   aL(Mz)=   .00014
**************************************************




*** Output values for couplings after the 6th CALL  *********
                  , Mz-->Mgut

***************    FINAL t =     .000000   **********************
```



```
 a1(Mgut)=   .04302   a2(Mgut)=   .04302  a3(Mgut)=   .04302
 at(Mgut)=   .01564   ab(Mgut)=   .00005  aL(Mgut)=   .00006

**************************************************



  mu(Mz)    =      -199.103     B(Mz)  =      59.156

  mu(Mgut)  =      -192.043   B(Mgut)  =     128.989


  At(Mgut)  =      100.000  Ab(Mgut)  =     100.000  AL(Mgut)  =     100.000

  M1(Mgut)  =      100.000  M2(Mgut)  =     100.000  M3(Mgut)  =     100.000



****************  INITIAL  VALUES AFTER 6th= INPUTS FOR THE 7th CALL ***********
********
   a(Mgut)=    .04302

 a1(Mgut)=   .04302   a2(Mgut)=   .04302  a3(Mgut)=   .04302
 at(Mgut)=   .01564   ab(Mgut)=   .00005   aL(Mgut)=   .00006

   Mo =   100.000      M1/2 =   100.000    Ao =   100.000

      B(Mgut)  =      128.988671   mu(Mgut)  =     -192.043303

******************************************************************************




****** FINAL VALUES ( sin^2 , aem in MS bar as well as all gauge couplings, NOT
YUKAWAS) **********


 *******   t final  ********    67.8340089 ********
       Mgut =    .48967D+17

 sin^2(exp)  =   .231189  sin^2(th)  =   .230852  sin^2(exp)-sin^2(th)  =  .000336
 1/aem =  128.9504sin^2(exp) = .2316-.88 (mt^2-160^2)/10^7

************************************************************************

   a1(Mz)=   .01680   a2(Mz)=   .03359   a3(Mz)=   .13037

   at(Mz)=   .07526   ab(Mz)=   .00067   aL(Mz)=   .00014

************************************************************************
   At(Mz)  =    288.701   Ab(Mz)=    488.701   Al(Mz)=    166.720

         B(Mz)=     59.156     Mu(Mz)=    -199.103

 DR-> mt(Mz)=   166.15 DR-> mb(Mz)=    3.91 DR-> mtau(Mz)=   1.77
      Mbottom(pole)  =      5.20000     Mtau(pole)  =      1.77700
   sin2b =   .4705882   sinb =  .9701425  cosb =  .2425356
************************************************************************
        AVRG MASS =            211.368
            Q3 =     264.146  Q2 =     294.445   Q1 =     294.445
```

```
          D3 =     288.139  D2 =     288.936   D1 =     288.936

          U3 =     222.669  U2 =     289.449   U1 =     289.449

          L3 =     120.886  L2 =     121.008   L1 =     121.008

          E3 =     106.217  E2 =     106.497   E1 =     106.497

************************************************************************

 Below m1,2,3 are   mi=sign(mi^2)*sqrt(mi^2)
 m1=     231.323  m2=     -53.484   m3=    -108.527

 IF det POSITIVE NO EW BREAKING    det =  -1.00

 Value of Mz from  (m1^2-m2^2*tan^2)/(tan^2-1)     91.188


 Gauginos   M1 =      37.471  M2 =      73.141   M3 =     295.771
 Physical gluino mass  Mg =      278.06119



  ***** PHYSICAL TOP MASS  Mt =     174.00000



 ########## tree level  HIGGS MASSES ###########

     CHARGED   HIGGSES   H+-  =   239.01263
     CP - ODD    HIGGS    A   =   225.05535
     CP - EVEN HIGGSES    Ho  =   229.67147
                          ho  =    78.84320




    *******     NEUTRALINO MASSES    *********

     N1 =    40.34546  N2 =    77.40590     N3 =   216.97832  N4 =  -222.71318



    ********    CHARGINO MASSES      **********

       C1 =   229.24587    C2 =    78.10094



    ********    STOPS        **********

       ST1 =     340.028    ST2 =     201.736



    ********    SBOTTOMS        **********

       SB1 =     276.208    SB2 =     258.160



    ********    SLEPTONS (3d gen.)       **********
```



```
       SE3+ =     129.808    SE3- =     112.625
       SN3 =      104.206


**********  REMAINING SQUARKS  **********

     UL =  276.81064   UR =  274.04706
     DL =  286.87759   DR =  276.60963





    ********    SLEPTONS (1+2 gen.)       **********

       SEL =     128.693    SER =     114.245
       SNL =     104.342



 ### RAD CORRECTED MASSES TO HIGGS #######

  The rad corrections to A are made to vanish by
  a proper choice of the scale

  On the left are the tree masses
     CHARGED   HIGGSES    H+-  =       239.01263  cor =      254.53754
     CP - ODD    HIGGS    A    =       225.05535  cor =      241.58284
     CP - EVEN HIGGSES:   Ho   =       229.67147  cor =      247.10418
                          ho   =        78.84320  cor =       93.12570




 *****   INITIAL t =   .000000   FINAL t = 77.086084  *********


************ INITIAL TEST VALUES, a1,2,3 and mt(Mz) in DR bar  *******

   a1(Mz)=   .01695   a2(Mz)=   .03389   a3(Mz)=   .13136


   Mo =   100.000      M1/2 =   100.000    Ao =   100.000
   mt(Mz)=   174.00   Mb(pole)=     5.20 Mtau(pole)=    1.78
   tanb    ,      sin2b =    4.000000   .470588
*******************************************************************************




 **  Iter.=  17  MGut=  .48967D+17 a1=  .04302 a2=  .04302 aGUT=  .04302

*** Output values for couplings in this run  *********

***            FINAL t =   67.834009         ***
   a1(Mz)=   .01680   a2(Mz)=   .03365   a3(Mz)=   .13174
   at(Mz)=   .07526   ab(Mz)=   .00067   aL(Mz)=   .00014
***************************************************
```

```
*** Output values for couplings after the 6th CALL  *********
                  , Mz-->Mgut

***************    FINAL t =     .000000   **********************
 a1(Mgut)=   .04302   a2(Mgut)=   .04302  a3(Mgut)=   .04302
 at(Mgut)=   .01564   ab(Mgut)=   .00005  aL(Mgut)=   .00006

**************************************************



  mu(Mz)    =      -199.103     B(Mz) =      59.156

  mu(Mgut)  =      -192.043   B(Mgut) =     128.989


  At(Mgut)  =      100.000  Ab(Mgut)  =     100.000  AL(Mgut)  =     100.000

  M1(Mgut)  =      100.000  M2(Mgut)  =     100.000  M3(Mgut)  =     100.000



****************  INITIAL  VALUES AFTER 6th= INPUTS FOR THE 7th CALL ***********
********
   a(Mgut)=    .04302

 a1(Mgut)=   .04302   a2(Mgut)=   .04302  a3(Mgut)=   .04302
 at(Mgut)=   .01564   ab(Mgut)=   .00005   aL(Mgut)=   .00006

   Mo =   100.000      M1/2 =   100.000    Ao =   100.000

      B(Mgut) =      128.988674   mu(Mgut) =     -192.043308

******************************************************************************




****** FINAL VALUES ( sin^2 , aem in MS bar as well as all gauge couplings, NOT
YUKAWAS) **********


 *******   t final   ********    67.8340094 ********
       Mgut =   .48967D+17

 sin^2(exp) =  .231189  sin^2(th) =  .230852  sin^2(exp)-sin^2(th) =  .000336
 1/aem =  128.9504sin^2(exp) = .2316-.88 (mt^2-160^2)/10^7

************************************************************************

   a1(Mz)=   .01680   a2(Mz)=   .03359   a3(Mz)=   .13037

   at(Mz)=   .07526   ab(Mz)=   .00067   aL(Mz)=   .00014

************************************************************************
   At(Mz) =    288.701   Ab(Mz)=    488.702   Al(Mz)=    166.720

         B(Mz)=     59.156     Mu(Mz)=    -199.103
```



```
 DR-> mt(Mz)=   166.15 DR-> mb(Mz)=    3.91 DR-> mtau(Mz)=   1.77
      Mbottom(pole) =      5.20000      Mtau(pole) =      1.77700
   sin2b =   .4705882   sinb =  .9701425  cosb =  .2425356
************************************************************************
        AVRG MASS =            211.368
            Q3 =     264.146  Q2 =     294.445   Q1 =     294.445

            D3 =     288.139  D2 =     288.936   D1 =     288.936

            U3 =     222.669  U2 =     289.449   U1 =     289.449

            L3 =     120.886  L2 =     121.008   L1 =     121.008

            E3 =     106.217  E2 =     106.497   E1 =     106.497

************************************************************************

 Below m1,2,3 are   mi=sign(mi^2)*sqrt(mi^2)
 m1=     231.323  m2=     -53.484   m3=    -108.527

 IF det POSITIVE NO EW BREAKING    det =  -1.00

 Value of Mz from  (m1^2-m2^2*tan^2)/(tan^2-1)     91.188


 Gauginos   M1 =      37.471  M2 =      73.141   M3 =     295.771
 Physical gluino mass  Mg =      278.06120



  ***** PHYSICAL TOP MASS  Mt =     174.00000



 ########## tree level  HIGGS MASSES ###########

     CHARGED   HIGGSES   H+-  =   239.01263
     CP - ODD    HIGGS    A   =   225.05535
     CP - EVEN HIGGSES    Ho  =   229.67148
                          ho  =    78.84320




    *******     NEUTRALINO MASSES    *********

     N1 =    40.34546  N2 =    77.40590    N3 =   216.97833  N4 =  -222.71319



    ********    CHARGINO MASSES      **********

       C1 =   229.24587    C2 =    78.10094



    ********    STOPS        **********

       ST1 =     340.028    ST2 =     201.736
```

```
   ********    SBOTTOMS        **********

      SB1 =      276.208    SB2 =      258.160



   ********    SLEPTONS (3d gen.)       **********

      SE3+ =      129.808    SE3- =      112.625
      SN3 =       104.206

**********  REMAINING SQUARKS  **********

    UL =  276.81064   UR =  274.04706
    DL =  286.87760   DR =  276.60964





   ********    SLEPTONS (1+2 gen.)       **********

      SEL =      128.693    SER =      114.245
      SNL =      104.342



 ### RAD CORRECTED MASSES TO HIGGS #######

  The rad corrections to A are made to vanish by
  a proper choice of the scale

  On the left are the tree masses
     CHARGED   HIGGSES    H+-  =       239.01263  cor =       254.53754
     CP - ODD    HIGGS    A    =       225.05535  cor =       241.58285
     CP - EVEN HIGGSES:   Ho   =       229.67148  cor =       247.10418
                          ho   =        78.84320  cor =        93.12570



> > > > > > > > > > > > > > > > > > > > > > > > > > > > > > > > > > >



                        ***  mu > 0   ***



 *****   INITIAL t =   .000000   FINAL t = 81.691254  *********


************ INITIAL TEST VALUES, a1,2,3 and mt(Mz) in DR bar  *******

   a1(Mz)=   .01695   a2(Mz)=   .03389   a3(Mz)=   .13136


   Mo =   600.000      M1/2 =   600.000    Ao =   600.000
   mt(Mz)=   174.00   Mb(pole)=     5.20 Mtau(pole)=    1.78
   tanb    ,      sin2b =    4.000000   .470588
```



```
*******************************************************************************




 **  Iter.=  12  MGut=  .13978D+17 a1=  .03988 a2=  .03988 aGUT=  .03988

*** Output values for couplings in this run  *********

***           FINAL t =   65.326615         ***
   a1(Mz)=   .01669   a2(Mz)=   .03208   a3(Mz)=   .10076
   at(Mz)=   .06665   ab(Mz)=   .00055   aL(Mz)=   .00013
***************************************************





*** Output values for couplings after the 6th CALL  *********
                  , Mz-->Mgut

***************    FINAL t =     .000000   *********************
 a1(Mgut)=   .03988   a2(Mgut)=   .03988  a3(Mgut)=   .03988
 at(Mgut)=   .02249   ab(Mgut)=   .00007  aL(Mgut)=   .00006

***************************************************



  mu(Mz)   =       937.463     B(Mz) =    -448.410

  mu(Mgut) =       945.553   B(Mgut) =    -122.380


  At(Mgut) =      600.000  Ab(Mgut) =     600.000  AL(Mgut) =     600.000

  M1(Mgut) =      600.000  M2(Mgut) =     600.000  M3(Mgut) =     600.000



****************  INITIAL  VALUES AFTER 6th= INPUTS FOR THE 7th CALL ***********
********
   a(Mgut)=    .03988

 a1(Mgut)=   .03988   a2(Mgut)=   .03988  a3(Mgut)=   .03988
 at(Mgut)=   .02249   ab(Mgut)=   .00007   aL(Mgut)=   .00006

   Mo =   600.000      M1/2 =   600.000    Ao =   600.000

      B(Mgut) =     -122.379754   mu(Mgut) =      945.552566

*******************************************************************************




****** FINAL VALUES ( sin^2 , aem in MS bar as well as all gauge couplings, NOT
YUKAWAS) **********


 *******   t final  ********    65.3266150 ********
       Mgut =   .13978D+17
```

```
 sin^2(exp) =  .231189  sin^2(th) =  .238222  sin^2(exp)-sin^2(th) = -.007034
 1/aem =  131.0712sin^2(exp) = .2316-.88 (mt^2-160^2)/10^7

************************************************************************

   a1(Mz)=   .01669   a2(Mz)=   .03203   a3(Mz)=   .09996

   at(Mz)=   .06665   ab(Mz)=   .00055   aL(Mz)=   .00013

************************************************************************
   At(Mz) =   1340.003   Ab(Mz)=   2358.024   Al(Mz)=    973.717

         B(Mz)=   -448.410     Mu(Mz)=     937.463

 DR-> mt(Mz)=   157.46 DR-> mb(Mz)=    3.57 DR-> mtau(Mz)=   1.76
      Mbottom(pole) =      5.20000      Mtau(pole) =      1.77700
   sin2b =   .4705882   sinb =  .9701425  cosb =  .2425356
************************************************************************
        AVRG MASS =          1075.855
            Q3 =    1316.831  Q2 =    1481.736   Q1 =    1481.736

            D3 =    1436.792  D2 =    1440.765   D1 =    1440.765

            U3 =    1074.710  U2 =    1444.962   U1 =    1444.962

            L3 =     719.875  L2 =     720.573   L1 =     720.573

            E3 =     636.983  E2 =     638.575   E1 =     638.575

************************************************************************

 Below m1,2,3 are   mi=sign(mi^2)*sqrt(mi^2)
 m1=    1174.259  m2=    -350.920   m3=    -648.358

 IF det POSITIVE NO EW BREAKING    det =  -1.00

 Value of Mz from  (m1^2-m2^2*tan^2)/(tan^2-1)     91.188


 Gauginos   M1 =     244.066  M2 =     460.311   M3 =    1479.756
 Physical gluino mass  Mg =     1321.78320



  ***** PHYSICAL TOP MASS  Mt =     174.00000



 ########## tree level  HIGGS MASSES ###########

     CHARGED   HIGGSES   H+-  =  1123.46553
     CP - ODD    HIGGS    A   =  1120.59719
     CP - EVEN HIGGSES    Ho  =  1121.42278
                          ho  =    80.40112




    *******     NEUTRALINO MASSES    *********

     N1 =   254.73875  N2 =   462.61313     N3 =   965.64150  N4 =  -955.89249
```



```
    ********    CHARGINO MASSES      **********

       C1 =   964.69612    C2 =   462.52631


    ********    STOPS        **********

       ST1 =    1233.614    ST2 =     929.928


    ********    SBOTTOMS        **********

       SB1 =    1295.864    SB2 =    1192.735


    ********    SLEPTONS (3d gen.)       **********

       SE3+ =     716.465    SE3- =     637.361
       SN3 =      712.298

 **********  REMAINING SQUARKS  **********

     UL = 1341.53934   UR = 1302.51900
     DL = 1343.52950   DR = 1298.41376




    ********    SLEPTONS (1+2 gen.)       **********

       SEL =     716.657    SER =     639.235
       SNL =     712.919



  ### RAD CORRECTED MASSES TO HIGGS #######

   The rad corrections to A are made to vanish by
   a proper choice of the scale

   On the left are the tree masses
      CHARGED   HIGGSES    H+-   =      1123.46553  cor =     1196.46193
      CP - ODD    HIGGS    A     =      1120.59719  cor =     1193.90338
      CP - EVEN HIGGSES:   Ho    =      1121.42278  cor =     1194.71326
                           ho    =        80.40112  cor =      112.39370




  *****   INITIAL t =   .000000   FINAL t = 77.086084  *********

 ************ INITIAL TEST VALUES, a1,2,3 and mt(Mz) in DR bar  *******
```

```
   a1(Mz)=   .01695   a2(Mz)=   .03389   a3(Mz)=   .13136


   Mo =   600.000      M1/2 =   600.000    Ao =   600.000
   mt(Mz)=   174.00   Mb(pole)=     5.20 Mtau(pole)=    1.78
   tanb    ,      sin2b =    4.000000   .470588
*********************************************************************************




 **  Iter.=  17  MGut=  .13977D+17 a1=  .03988 a2=  .03988 aGUT=  .03988

*** Output values for couplings in this run  *********

***           FINAL t =    65.326555         ***
   a1(Mz)=   .01669   a2(Mz)=   .03208   a3(Mz)=   .10076
   at(Mz)=   .06665   ab(Mz)=   .00055   aL(Mz)=   .00013
***************************************************





*** Output values for couplings after the 6th CALL  *********
                  , Mz-->Mgut

***************    FINAL t =     .000000   *********************
 a1(Mgut)=   .03988   a2(Mgut)=   .03988  a3(Mgut)=   .03988
 at(Mgut)=   .02249   ab(Mgut)=   .00007  aL(Mgut)=   .00006

***************************************************



  mu(Mz)   =       937.462     B(Mz) =    -448.410

  mu(Mgut) =       945.556   B(Mgut) =    -122.377


  At(Mgut) =      600.000  Ab(Mgut) =     600.000  AL(Mgut) =     600.000

  M1(Mgut) =      600.000  M2(Mgut) =     600.000  M3(Mgut) =     600.000



****************  INITIAL  VALUES AFTER 6th= INPUTS FOR THE 7th CALL ***********
********
   a(Mgut)=    .03988

 a1(Mgut)=   .03988   a2(Mgut)=   .03988  a3(Mgut)=   .03988
 at(Mgut)=   .02249   ab(Mgut)=   .00007   aL(Mgut)=   .00006

   Mo =   600.000      M1/2 =   600.000    Ao =   600.000

      B(Mgut) =     -122.377311   mu(Mgut) =      945.555974

*********************************************************************************
```



```
****** FINAL VALUES ( sin^2 , aem in MS bar as well as all gauge couplings, NOT
YUKAWAS) **********


 *******   t final  ********    65.3265551 ********
       Mgut =    .13977D+17

 sin^2(exp) =   .231189  sin^2(th) =   .238222  sin^2(exp)-sin^2(th) = -.007034
 1/aem =  131.0712sin^2(exp) = .2316-.88 (mt^2-160^2)/10^7

*************************************************************************

   a1(Mz)=   .01669   a2(Mz)=   .03203   a3(Mz)=   .09996

   at(Mz)=   .06665   ab(Mz)=   .00055   aL(Mz)=   .00013

*************************************************************************
   At(Mz) =   1339.992   Ab(Mz)=   2358.016   Al(Mz)=    973.717

         B(Mz)=   -448.410     Mu(Mz)=     937.462

 DR-> mt(Mz)=   157.46 DR-> mb(Mz)=    3.57 DR-> mtau(Mz)=   1.76
      Mbottom(pole) =      5.20000      Mtau(pole) =      1.77700
   sin2b =   .4705882   sinb =  .9701425  cosb =  .2425356
*************************************************************************
        AVRG MASS =          1075.853
            Q3 =    1316.827  Q2 =    1481.732   Q1 =    1481.732

            D3 =    1436.788  D2 =    1440.761   D1 =    1440.761

            U3 =    1074.706  U2 =    1444.959   U1 =    1444.959

            L3 =     719.875  L2 =     720.573   L1 =     720.573

            E3 =     636.983  E2 =     638.575   E1 =     638.575

*************************************************************************

 Below m1,2,3 are   mi=sign(mi^2)*sqrt(mi^2)
 m1=    1174.258  m2=    -350.917   m3=    -648.358

 IF det POSITIVE NO EW BREAKING    det =  -1.00

 Value of Mz from  (m1^2-m2^2*tan^2)/(tan^2-1)     91.188


 Gauginos   M1 =     244.066  M2 =     460.312   M3 =    1479.752
 Physical gluino mass  Mg =     1321.78040



  ***** PHYSICAL TOP MASS  Mt =     174.00000



 ########## tree level  HIGGS MASSES ###########

     CHARGED   HIGGSES   H+-  =  1123.46638
     CP - ODD    HIGGS    A   =  1120.59805
     CP - EVEN HIGGSES    Ho  =  1121.42364
                          ho  =    80.40112
```

```
   *******    NEUTRALINO MASSES    *********

    N1 =   254.73908  N2 =   462.61347     N3 =   965.64139  N4 =  -955.89242


   ********    CHARGINO MASSES      **********

      C1 =   964.69601    C2 =   462.52665


   ********    STOPS        **********

      ST1 =    1233.611    ST2 =     929.924


   ********    SBOTTOMS        **********

      SB1 =    1295.861    SB2 =    1192.732


   ********    SLEPTONS (3d gen.)       **********

      SE3+ =     716.465    SE3- =     637.361
      SN3 =      712.298

**********  REMAINING SQUARKS  **********

    UL = 1341.53660   UR = 1302.51619
    DL = 1343.52675   DR = 1298.41093




   ********    SLEPTONS (1+2 gen.)       **********

      SEL =     716.657    SER =     639.235
      SNL =     712.919


 ### RAD CORRECTED MASSES TO HIGGS #######

  The rad corrections to A are made to vanish by
  a proper choice of the scale

  On the left are the tree masses
     CHARGED   HIGGSES    H+-  =      1123.46638  cor =     1196.46188
     CP - ODD    HIGGS    A    =      1120.59805  cor =     1193.90334
     CP - EVEN HIGGSES:   Ho   =      1121.42364  cor =     1194.71322
                          ho   =        80.40112  cor =      112.39361
```



```
                        ***  mu < 0   ***



 *****   INITIAL t =   .000000   FINAL t = 81.691254  *********


************ INITIAL TEST VALUES, a1,2,3 and mt(Mz) in DR bar  *******

   a1(Mz)=   .01695   a2(Mz)=   .03389   a3(Mz)=   .13136


   Mo =   600.000      M1/2 =   600.000    Ao =   600.000
   mt(Mz)=   174.00   Mb(pole)=     5.20 Mtau(pole)=    1.78
   tanb    ,      sin2b =    4.000000   .470588
******************************************************************************




 **  Iter.=  12  MGut=  .14121D+17 a1=  .03988 a2=  .03988 aGUT=  .03988

*** Output values for couplings in this run  *********

***          FINAL t =   65.347085          ***
   a1(Mz)=   .01669   a2(Mz)=   .03208   a3(Mz)=   .10086
   at(Mz)=   .06676   ab(Mz)=   .00058   aL(Mz)=   .00014
**************************************************




*** Output values for couplings after the 6th CALL  *********
                  , Mz-->Mgut

***************    FINAL t =     .000000   *********************
 a1(Mgut)=   .03988   a2(Mgut)=   .03988  a3(Mgut)=   .03988
 at(Mgut)=   .02255   ab(Mgut)=   .00007  aL(Mgut)=   .00006

**************************************************



  mu(Mz)   =      -938.773     B(Mz) =     310.664

  mu(Mgut) =      -947.557   B(Mgut) =     638.137


  At(Mgut) =      600.000  Ab(Mgut) =     600.000  AL(Mgut) =     600.000

  M1(Mgut) =      600.000  M2(Mgut) =     600.000  M3(Mgut) =     600.000



****************  INITIAL  VALUES AFTER 6th= INPUTS FOR THE 7th CALL **********
********
   a(Mgut)=    .03988
```

```
 a1(Mgut)=   .03988   a2(Mgut)=   .03988  a3(Mgut)=   .03988
 at(Mgut)=   .02255   ab(Mgut)=   .00007   aL(Mgut)=   .00006

   Mo =   600.000      M1/2 =   600.000    Ao =   600.000

      B(Mgut) =      638.136750   mu(Mgut) =     -947.556863

*******************************************************************************




****** FINAL VALUES ( sin^2 , aem in MS bar as well as all gauge couplings, NOT
YUKAWAS) **********


 *******   t final  ********    65.3470847 ********
       Mgut =   .14121D+17

 sin^2(exp) =  .231189  sin^2(th) =  .238186  sin^2(exp)-sin^2(th) = -.006998
 1/aem =  131.0775sin^2(exp) = .2316-.88 (mt^2-160^2)/10^7

*************************************************************************

   a1(Mz)=   .01669   a2(Mz)=   .03203   a3(Mz)=   .10006

   at(Mz)=   .06676   ab(Mz)=   .00058   aL(Mz)=   .00014

*************************************************************************
   At(Mz) =   1339.851   Ab(Mz)=   2359.298   Al(Mz)=    973.487

         B(Mz)=    310.664     Mu(Mz)=    -938.773

 DR-> mt(Mz)=   157.55 DR-> mb(Mz)=    3.68 DR-> mtau(Mz)=   1.79
      Mbottom(pole) =      5.20000      Mtau(pole) =      1.77700
   sin2b =   .4705882   sinb =  .9701425  cosb =  .2425356
*************************************************************************
        AVRG MASS =           1076.563
            Q3 =    1317.628  Q2 =    1482.809   Q1 =    1482.809

            D3 =    1437.651  D2 =    1441.866   D1 =    1441.866

            U3 =    1075.483  U2 =    1446.059   U1 =    1446.059

            L3 =     719.890  L2 =     720.606   L1 =     720.606

            E3 =     636.945  E2 =     638.579   E1 =     638.579

*************************************************************************

 Below m1,2,3 are   mi=sign(mi^2)*sqrt(mi^2)
 m1=    1174.837  m2=    -351.134   m3=    -540.040

 IF det POSITIVE NO EW BREAKING    det =  -1.00

 Value of Mz from  (m1^2-m2^2*tan^2)/(tan^2-1)     91.188


 Gauginos   M1 =     243.984  M2 =     460.238   M3 =    1480.888
 Physical gluino mass  Mg =     1322.62589
```



```
  ***** PHYSICAL TOP MASS  Mt =     174.00000



 ########## tree level  HIGGS MASSES ###########

     CHARGED   HIGGSES   H+-  =  1124.00410
     CP - ODD    HIGGS    A   =  1121.13703
     CP - EVEN HIGGSES    Ho  =  1121.96222
                          ho  =    80.40118




    *******     NEUTRALINO MASSES    *********

     N1 =   256.84953  N2 =   470.53462     N3 =   959.73534  N4 =  -960.16713



    ********    CHARGINO MASSES      **********

       C1 =   962.17830    C2 =   470.54838



    ********    STOPS        **********

       ST1 =    1216.754    ST2 =     953.095



    ********    SBOTTOMS        **********

       SB1 =    1296.021    SB2 =    1193.821



    ********    SLEPTONS (3d gen.)       **********

       SE3+ =     716.210    SE3- =     637.635
       SN3 =      712.317

**********  REMAINING SQUARKS  **********

     UL = 1342.34899   UR = 1303.34466
     DL = 1344.33694   DR = 1299.24245




    ********    SLEPTONS (1+2 gen.)       **********

       SEL =     716.690    SER =     639.238
       SNL =     712.954
```

```
 ### RAD CORRECTED MASSES TO HIGGS #######

  The rad corrections to A are made to vanish by
  a proper choice of the scale

  On the left are the tree masses
     CHARGED   HIGGSES    H+-  =      1124.00410  cor =     1249.56283
     CP - ODD    HIGGS    A    =      1121.13703  cor =     1247.11448
     CP - EVEN HIGGSES:   Ho   =      1121.96222  cor =     1248.10002
                          ho   =        80.40118  cor =      108.14686



 *****   INITIAL t =   .000000   FINAL t = 77.086084  *********


************ INITIAL TEST VALUES, a1,2,3 and mt(Mz) in DR bar  *******

   a1(Mz)=   .01695   a2(Mz)=   .03389   a3(Mz)=   .13136


   Mo =   600.000      M1/2 =   600.000    Ao =   600.000
   mt(Mz)=   174.00   Mb(pole)=     5.20 Mtau(pole)=    1.78
   tanb    ,      sin2b =    4.000000   .470588
******************************************************************************



 **  Iter.=  17  MGut=  .14121D+17 a1=  .03988 a2=  .03988 aGUT=  .03988

*** Output values for couplings in this run  *********

***           FINAL t =   65.347084         ***
   a1(Mz)=   .01669   a2(Mz)=   .03208   a3(Mz)=   .10086
   at(Mz)=   .06676   ab(Mz)=   .00058   aL(Mz)=   .00014
**************************************************




*** Output values for couplings after the 6th CALL  *********
                  , Mz-->Mgut

***************    FINAL t =     .000000   *********************
 a1(Mgut)=   .03988   a2(Mgut)=   .03988  a3(Mgut)=   .03988
 at(Mgut)=   .02255   ab(Mgut)=   .00007  aL(Mgut)=   .00006

**************************************************



  mu(Mz)    =      -938.772     B(Mz) =     310.664

  mu(Mgut) =      -947.556   B(Mgut) =     638.136


  At(Mgut) =      600.000  Ab(Mgut) =     600.000  AL(Mgut) =     600.000
```



```
  M1(Mgut) =      600.000  M2(Mgut) =     600.000  M3(Mgut) =     600.000


****************  INITIAL  VALUES AFTER 6th= INPUTS FOR THE 7th CALL ***********
********
   a(Mgut)=    .03988

 a1(Mgut)=   .03988   a2(Mgut)=   .03988  a3(Mgut)=   .03988
 at(Mgut)=   .02255   ab(Mgut)=   .00007   aL(Mgut)=   .00006

   Mo =   600.000      M1/2 =   600.000    Ao =   600.000

      B(Mgut) =      638.135945   mu(Mgut) =     -947.555658

******************************************************************************




****** FINAL VALUES ( sin^2 , aem in MS bar as well as all gauge couplings, NOT
YUKAWAS) **********


 *******   t final  ********    65.3470837 ********
       Mgut =   .14121D+17

 sin^2(exp) =  .231189  sin^2(th) =  .238186  sin^2(exp)-sin^2(th) = -.006998
 1/aem =  131.0775sin^2(exp) = .2316-.88 (mt^2-160^2)/10^7

***********************************************************************

   a1(Mz)=   .01669   a2(Mz)=   .03203   a3(Mz)=   .10006

   at(Mz)=   .06676   ab(Mz)=   .00058   aL(Mz)=   .00014

***********************************************************************
   At(Mz) =   1339.853   Ab(Mz)=   2359.298   Al(Mz)=    973.487

         B(Mz)=    310.664     Mu(Mz)=    -938.772

 DR-> mt(Mz)=   157.55 DR-> mb(Mz)=    3.68 DR-> mtau(Mz)=   1.79
      Mbottom(pole) =      5.20000      Mtau(pole) =      1.77700
   sin2b =   .4705882   sinb =  .9701425  cosb =  .2425356
***********************************************************************
        AVRG MASS =          1076.563
            Q3 =    1317.628  Q2 =    1482.808   Q1 =    1482.808

            D3 =    1437.651  D2 =    1441.866   D1 =    1441.866

            U3 =    1075.483  U2 =    1446.059   U1 =    1446.059

            L3 =     719.890  L2 =     720.606   L1 =     720.606

            E3 =     636.945  E2 =     638.579   E1 =     638.579

***********************************************************************

 Below m1,2,3 are   mi=sign(mi^2)*sqrt(mi^2)
 m1=    1174.837  m2=    -351.134   m3=    -540.040

 IF det POSITIVE NO EW BREAKING    det =  -1.00
```

```
Value of Mz from  (m1^2-m2^2*tan^2)/(tan^2-1)      91.188


Gauginos   M1 =     243.984  M2 =     460.238   M3 =    1480.888
Physical gluino mass  Mg =     1322.62582



 ***** PHYSICAL TOP MASS  Mt =     174.00000



########## tree level  HIGGS MASSES ###########

    CHARGED   HIGGSES   H+-  =  1124.00365
    CP - ODD    HIGGS    A   =  1121.13658
    CP - EVEN HIGGSES    Ho  =  1121.96176
                         ho  =    80.40118



   *******     NEUTRALINO MASSES    *********

    N1 =   256.84953  N2 =   470.53462     N3 =   959.73477  N4 =  -960.16656



   ********    CHARGINO MASSES      **********

      C1 =   962.17773    C2 =   470.54838


   ********    STOPS        **********

      ST1 =    1216.754    ST2 =     953.095


   ********    SBOTTOMS        **********

      SB1 =    1296.021    SB2 =    1193.822


   ********    SLEPTONS (3d gen.)       **********

      SE3+ =     716.210    SE3- =     637.635
      SN3 =      712.317

**********  REMAINING SQUARKS  **********

    UL = 1342.34893   UR = 1303.34461
    DL = 1344.33689   DR = 1299.24240
```



```
   ********    SLEPTONS (1+2 gen.)       **********

      SEL =     716.690    SER =     639.238
      SNL =     712.954



### RAD CORRECTED MASSES TO HIGGS #######

 The rad corrections to A are made to vanish by
 a proper choice of the scale

 On the left are the tree masses
    CHARGED   HIGGSES    H+-  =      1124.00365  cor =     1249.56234
    CP - ODD    HIGGS    A    =      1121.13658  cor =     1247.11399
    CP - EVEN HIGGSES:   Ho   =      1121.96176  cor =     1248.09953
                         ho   =        80.40118  cor =      108.14688



> > > > > > > > > > > > > > > > > > > > > > > > > > > > > > > > > > 
```