

NJOY/HOGENBIRK-02 - 18 December 1992

**ECN Corrections to NJOY-91.38**

ECN Petten, EFF-DOC-180, December 1992

by

**A. Hogenbirk**  
**ECN Petten**

From: NL%"hogenbirk@ECN.NL" 18-DEC-1992 12:43:59.26  
To: sartori@frneab51.bitnet  
CC: rvdstad@ec.NL  
Subj: updates for NJOY91.38

Received: From HEARNVAX(MAILER) by FRNEAB51 with Jnet id 6858  
for SARTORI@FRNEAB51; Fri, 18 Dec 1992 12:43 GMT

Received: from ECN.NL (ECNICE) by HEARNVAX.nic.SURFnet.nl with PMDF#10216; Tue,  
15 Dec 1992 13:47 MET

Received: from ecnsun.ecn.nl by ECN.NL (PMDF #12521) id  
<01GSCHWQ0FTS00351X@ECN.NL>; Tue, 15 Dec 1992 13:46 GMT+0100

Received: from fender.ecn.nl by ecnsun.ECN.NL (4.1/SMI-4.0) id AA24425; Tue, 15  
Dec 92 13:45:13 +0100

Date: Tue, 15 Dec 92 13:45:13 +0100

From: hogenbirk@ECN.NL (Alfred Hogenbirk)

Subject: updates for NJOY91.38

To: sartori@frneab51.bitnet

Cc: rvdstad@ec.NL

Message-id: <9212151245.AA24425@ecnsun.ECN.NL>

X-Envelope-to: sartori@frneab51.bitnet

Dear Enrico,

Herewith I send you the updates we applied to NJOY91.38.  
The printed version you received already from Rob van der Stad.  
We hope that the distribution of updates as found by the  
European users of NJOY will be useful for all users.

Best regards,

Alfred Hogenbirk  
ECN Petten

```
*ident ecn_nj1
*/
*/ prohibit vectorization
*/ ---- module move.f
*i njoy.2784
C$DIR SCALAR
*/
*ident ecn_nj2
*/
*/ adapt time and date routines to unix systems
*/
*/ ---- module timer.f
*d njoy.768
    real*4 tarr(2),etime
    time = etime(tarr)
*/ ---- module dater.f
*d njoy.778
    character*9 tdate
    call date(tdate)
    hdate = tdate(1:2)//tdate(4:6)//tdate(8:9)
*/ ---- module wclock.f
*d njoy.788
    call time(htime)
*/
*/ set 'lab' and 'mx' for banner
*/
*/ ---- module banner.f
*d njoy.327
    data lab /'ecn  '/
*d njoy.328
    data mx /'c230'/
*/
*ident ecn_nj3
*/
```

```

*/ input is read from file 'njoy_inp'
*/
*/ ---- module njoy.f
*d njoy.139
    nsysi=55
    open (nsysi,file='njoy_inp')
*/
*ident ecn_nj4
*/
*/ allow lower- and uppercase in input
*/
*i njoy.133
    data cstop /4hSTOP/
    data creco /4hRECO/
    data cbroa /4hBROA/
    data cunre /4hUNRE/
    data cheat /4hHEAT/
    data cther /4hTHER/
    data cgrou /4hGROU/
    data cgami /4hGAMI/
    data cerro /4hERRO/
    data ccov /4hCOVR/
    data cmode /4hMODE/
    data cdtf /4hDTFR/
    data cccc /4hCCCC/
    data cmatx /4hMATX/
    data cresx /4hRESX/
    data cace /4hACER/
    data cpow /4hPOWR/
    data cwims /4hWIMS/
    data cplot /4hPLOT/
    data cmix /4hMIXR/
    data cpur /4hPURR/
c
*d njoy.168,njoy.188
    if (dmod.eq.stop .or. dmod.eq.cstop) go to 1000
    if (dmod.eq.reco .or. dmod.eq.creco) go to 110
    if (dmod.eq.broa .or. dmod.eq.cbroa) go to 120
    if (dmod.eq.unre .or. dmod.eq.cunre) go to 130
    if (dmod.eq.heat .or. dmod.eq.cheat) go to 140
    if (dmod.eq.ther .or. dmod.eq.cther) go to 150
    if (dmod.eq.grou .or. dmod.eq.cgrou) go to 160
    if (dmod.eq.gami .or. dmod.eq.cgami) go to 170
    if (dmod.eq.erro .or. dmod.eq.cerro) go to 190
    if (dmod.eq.cov .or. dmod.eq.ccov ) go to 200
    if (imod.eq.mode .or. dmod.eq.cmode) go to 210
    if (dmod.eq.dtf .or. dmod.eq.cdtf ) go to 220
    if (dmod.eq.cccc .or. dmod.eq.cccc) go to 230
    if (imod.eq.matx .or. dmod.eq.cmatx) go to 240
    if (dmod.eq.resx .or. dmod.eq.cresx) go to 250
    if (dmod.eq.ace .or. dmod.eq.cace ) go to 260
    if (dmod.eq.pow .or. dmod.eq.cpow ) go to 270
    if (dmod.eq.wims .or. dmod.eq.cwims) go to 280
    if (dmod.eq.plot .or. dmod.eq.cplot) go to 290
    if (imod.eq.mix .or. dmod.eq.cmix ) go to 300
    if (dmod.eq.pur .or. dmod.eq.cpur ) go to 310
c
*/ ---- module free.f
*i njoy.448
    integer hh, ee, rr
    data hh/1hH/, ee/1hE/, rr/1hR/
*d njoy.481
    if (numr.and.(char.eq.r .or. char.eq.rr)) go to 300
*d njoy.600
    if (char.ne.h .and. char.ne.hh) go to 340
*d njoy.607
    340 if (char.ne.e.and.char.ne.ee
        > .and.char.ne.plus.and.char.ne.minus) go to 350

```

```

*d njoy.610
  if (char.eq.e .or. char.eq.ee) go to 120
*/ ---- module letter.f
*d njoy.666,njoy.667
  letter=0
  if (i.ge.1.and.i.le.26) then
    letter=i
  else
    i=ichar(cchar)-ichar('A')+1
    if (i.ge.1.and.i.le.26) then
      letter=i
    endif
  endif
endif

*/
*ident ecn_nj5
*/
*/ correct error in parameterlist of function gami, typo??
*/ ---- module e1.f
*d njoy.2940
  110 e1=gami(0.,x)
*/
*ident ecn_nj6
*/
*/ error message for missing tape identification record on endfb file
*/ ---- module tpidio.f
*i njoy.1249
  if (mfh.ne.0 .or. mth.ne.0) goto 900
*i njoy.1251
  if (mfh.ne.0 .or. mth.ne.0) goto 900
*i njoy.1273
c
c   ***missing or wrong tape identification record.
  900 call error('tpidio','no tape identification record.',' ')
  return
*/
*ident ecn_gr1
*/
*/ modifications suggested by M. Konieczny
*/                               AEA Technology
*/                               Culham Laboratory
*/
*/ to solve A. Hogenbirk's problem with Be 9
*/ complementary to Konieczny mods in up30
*/ normalization of angular distributions (mf6)
*/
*/ ---- module f6lab.f
*i groupr.4735
  if (lhi.ge.mhi) go to 216
*i groupr.4815
c
c   Interpolate for P0-coefficient at intermediate secondary energy
  call terp1(clo(llo-nclo),clo(llo-nclo+1),clo(llo),clo(llo+1),
    & ep*xlo/xhi,tab1,lep)
c
*i groupr.4820
  do 333 k=1,n1
    term1(k)=term1(k)*tab1
  333 continue
*i groupr.4839
c
c   Interpolate for P0-coefficient at intermediate secondary energy
  call terp1(chi(lhi-nchi),chi(lhi-nchi+1),chi(lhi),chi(lhi+1),
    & ep*xhi/xhi,tab2,lep)
c
*i groupr.4844
  do 373 k=1,n1
    term2(k)=term2(k)*tab2
  373 continue

```

```

c
c   Interpolate Legendre coefficients at intermediate secondary energy
c
*/
*ident ecn_ac1
*/
*/ increase dimension of xss array
*/ ---- numerous modules
*d up25.346
    max3=4000000
*d up25.362
    common /xsst/ n3,xss(4000000)
*d up25.364
    common /xsst/ n3,xss(4000000)
*d up25.366
    common /xsst/ n3,xss(4000000)
*d up25.368
    common /xsst/ n3,xss(4000000)
*d up25.370
    common /xsst/ n3,xss(4000000)
*d up25.372
    common /xsst/ n3,xss(4000000)
*d up25.374
    common /xsst/ n3,xss(4000000)
*d up25.376
    common /xsst/ n3,xss(4000000)
*d up25.378
    common /xsst/ n3,xss(4000000)
*d up25.380
    common /xsst/ n3,xss(4000000)
*d up25.382
    common /xsst/ n3,xss(4000000)
*d up25.384
    common /xsst/ n3,xss(4000000)
*d up25.386
    common /xsst/ n3,xss(4000000)
*d up25.388
    common /xsst/ n3,xss(4000000)
*d up25.390
    common /xsst/ n3,xss(4000000)
*/
*ident ecn_ac2
*/ misc acer fixes (cont)
*/
*/ ---- module change.f
*d acer.6103
    270 if (nout.ne.1) nr=nint(xss(1))
*/
*/ ---- module acer.f
*d acer.226
    suff=z(4)
*/ ---- module acelod.f
*i acer.3675
c *** adjust zaid
    if (suff.ge.0.) zaid=nint(zaid)+suff
c
*/ ---- module acelod.f
*/ correct pointer to dlw block
*d up25.231
    xss(last+2)=next-dlw+1
*/ increase jscr pointer
*d acer.4313,acer.4314
    570 jscr=jscr+nw
    if (nb.eq.0) go to 575
*/ correct typo in up32
*d up32.94
    dodmum=beta*beta*(beta+emu1)/sqrt((beta*beta+
*/ correct typo in up25

```

```

*d up25.237
  xss(nex+6)=-a(iscr+4+2*m+2*n)*1.e-6
*/
*/ ---- module mtname.f
*d acer.5641
  5 '(n,n*f) ', '(n,2nf) ', '(n,n*)a ', '(n,n*)3a ',
*/
*ident ecn_ac3
*/ allow processing of mt600-849 in endf-6 format
*/ problem encountered in EFF2.2, 56Fe
*/
*/ ---- module acelod.f
*d up25.413
  common /phot/ ntrpp,nf12s,mf12s(250),nf16s,mf16s(250)
*/
*/ ---- module convr.f
*d up25.406
  common/phot/ntrp,nf12s,mf12s(250),nf16s,mf16s(250)
*/
*/ ---- module first.f
*d up25.393
  common/phot/ntrp,nf12s,mf12s(250),nf16s,mf16s(250)
*d acer.587
  if (nf12s.gt.250)
*/
*/ ---- module gamsum.f
*d up25.404
  common/phot/ntrp,nf12s,mf12s(250),nf16s,mf16s(250)
*/
*/ ---- module unionx.f
*d up25.395
  common/phot/ntrp,nf12s,mf12s(250),nf16s,mf16s(250)
*/
*ident ecn_ac4
*/
*/ rewind before reading mf5 data (file position was EOF ????)
*/ problem encountered in processing 238U from JEF1.1
*d acer.4021
  345 call repoz(nin)
  call findf(matd,5,mt,nin)
*/
*ident ecn_ac5
*/
*/ restrict delfcm to physical limits
*i up32.111
c   don't accept unreasonable distributions
  if (delfcm.lt.0.) delfcm=0.
*ident ecn_ac6
*/
*/ correct header in acer library for weighted angular energy distribution
*/ ---- module acesix.f
*i acer.6589
  common /nxst/ len2,idpni,nil,nieb,idpnc,ncl,ifeng,nxsd(9)
*i acer.6737
  ifeng = 1
*i acer.6746
  ifeng = 0
*/
*ident ecn_ac7
*/
*/ prevent overflow for unreasonable Kalbach-fit of
*/ angular distributions
*/ ---- module fndar1.f
*i up32.129
  if (fbarc.lt.1.0e-10) then
    call mess('fndar1','endpoints are zero',' ')
    return
  endif

```

```

*d up32.136,up32.138
  if (abs(fofa).lt.1.e-5) go to 120
  if (abs(akal) .gt. 350) then
    s2a=sign(1.0e300,akal)
    c2a=sign(1.0e300,akal)
    call mess('fndar1','argument sinh or cosh too large',' ')
    return
  else
    s2a=sinh(2.*akal)
    c2a=cosh(2.*akal)
  endif
*d up32.143
  if (iq1.lt.300) go to 110
*d up32.151,up32.152
  if (rkal.lt.0..or.rkal.gt.1.) then
    call mess('fndar1','kalbach r is unreasonable',' ')
    if (rkal.lt.0.) rkal=0.
    if (rkal.gt.1.) rkal=1.
  endif
*/
*ident ecn_ac8
*/ ???????????
*/ undo all up25 mods to topfil
*/ ---- module topfil.f
*d up25.121
  data nwmax4/5000/
*d up25.123
  nwmax=nwmax4
*d up25.125
  if (mf.eq.6.and.(mt.le.150.or.mt.ge.600)) go to 121
  go to 300
c skip redundant fission
*d up25.127
  128 if (nwmax.ne.nwmax4) go to 129
  call releas('scr',-1,a)
  nwmax=-1
  call reserv('scr',nwmax,iscr,a)
  if (nwmax.eq.nwmax4) nwmax=nwmax-1
  129 ik=ik+1
*d up25.129,up25.131
  140 if (lf.eq.5) go to 185
  if (lf.ne.1) go to 200
*d up25.135,up25.139
*/
*ident ecn_br1
*/ undo up23 mod (dean)
*/ value of fact machine dependent ??
*/ ---- module broadr.f
*d up23.4
*/
*ident ecn_un1
*/ change ndigit and increase unresolved upper limit
*/ problem encountered when processing 56Fe from EFF2.2
*/ ---- module rdunf2.f
*d unresr.366
  data ndigit/7/
  data unrmx/3.5e6/
*d unresr.376
  ehr=unrmx
*d unresr.378
  a(ieunr)=unrmx
*d unresr.610
  if (enext.ge.unrmx) go to 380

```