

**Nuclear Data Section
International Atomic Energy Agency
P.O.Box 100, A-1400 Vienna, Austria**

Memo CP-D/718

Date: 1 November 2011

To: Distribution

From: N. Otsuka

Subject: Angular differential cross section without level specification

The level energy of the reaction product (e.g., E-LVL) must be coded with PAR in REACTION SF5 when the incident energy may leave the reaction product to an excited level and the data are for a specific level. This rule is applied to most of angular differential cross sections in two-body reactions.

I was informed by A. Gurbich (IPPE, Russia) and M. Kokkoris (National Tech. Univ., Athens) about EXFOR (d,p) angular differential cross section data sets without level energies. In order to study the situation systematically, all subentries satisfying the following conditions were searched and analyzed:

1. Two-body reaction angular differential cross section;
2. No information on level energy of the reaction product;
3. Excitation of the reaction product to the 1st excitation level is possible;
4. The outgoing particle (SF3) is γ , n, p, d, t, ^3He or ^4He .
5. The reaction product (SF4) is *not* ^1H , ^2H , ^3H or ^3He .

First excitation level energies compiled in the RIPL-3 library were used for #3.

Totally 777 subentries were found, and further checked against the articles. Finally I identified coding mistakes in 288 subentries while did not see a problem in 35 subentries (e.g., sum for several levels). For 454 subentries, I could not find key information in the article, or could not find the article. The list of the 288 subentries is attached to this memo.

Note that I checked only angular differential cross sections (DA). Similar mistakes are possible in the same entry (e.g., cross section derived by integration of angular differential cross sections, angular dependent polarization quantities). I found such cases occasionally and included them to the list, too.

Distribution:

aikawa@jcprg.org
blokhin@ippe.ru
cgc@ciae.ac.cn
chiba@earth.sgu.ac.jp
emmeric.dupont@oecd.org
fukahori.tokio@jaea.go.jp
ganesan@barc.gov.in
gezg@ciae.ac.cn
hongwei@ciae.ac.cn
jhchang@kaeri.re.kr
kaltchenko@kinr.kiev.ua
katakura.junichi@jaea.go.jp
kato@nucl.sci.hokudai.ac.jp
kiralyb@atomki.hu
l.vrapcenjak@iaea.org
kiyoshi.matsumoto@oecd.org
manuel.bossant@oecd.org
manokhin@ippe.ru
mmarina@ippe.ru
mwherman@bnl.gov
nicolas.soppera@oecd.org
nklimova@kinr.kiev.ua

n.otsuka@iaea.org
nrdc@jcprg.org
oblozinsky@bnl.gov
ogritzay@kinr.kiev.ua
otto.schwerer@aon.at
pronyaev@ippe.ru
r.forrest@iaea.org
samaev@obninsk.ru
s.babykina@polyn.kiae.su
scyang@kaeri.re.kr
s.simakov@iaea.org
stakacs@atomki.hu
stanislav.hlavac@savba.sk
sv.dunaeva@gmail.com
taova@expd.vniief.ru
tarkanyi@atomki.hu
vvvarlamov@gmail.com
vlasov@kinr.kiev.ua
v.semkova@iaea.org
v.zerkin@iaea.org
yolee@kaeri.re.kr
zhuangyx@ciae.ac.cn

cc:

gurbich@ippe.ru
kokkoris@central.ntua.gr

Partial data coded without level energies (2011-11-01)

- All energies are given in MeV.
- Centres are asked to check the original article before corrections.

Subentry	REACTION	E _{exc,1st}	E _{thr,g.s.}	E _{thr,1st}	E _{inc,min}	E _{inc,max}	Remark (Source of key information is parenthesized.)
10632.008	4-BE-9(N,P)3-LI-9	2.69e+0	1.43e+1	1.73e+1	1.83e+1	1.83e+1	Add SF5=PAR and E-LVL=0 (Fig.5c)
10632.009	4-BE-9(N,T)3-LI-7	4.78e-1	1.16e+1	1.21e+1	1.83e+1	1.83e+1	Add SF5=PAR and E-LVL=0+0.478 (Fig.5c)
10814.002	20-CA-40(N,G)20-CA-41	1.94e+0	0.00e+0	0.00e+0	6.00e+0	1.28e+1	Add SF5=PAR and E-LVL=0 (abstract)
10814.003	20-CA-40(N,G)20-CA-41	1.94e+0	0.00e+0	0.00e+0	6.00e+0	1.30e+1	Add SF5=PAR and E-LVL=0 (abstract)
12777.002	2-HE-3(N,G)2-HE-4	2.02e+1	0.00e+0	0.00e+0	9.00e+0	9.00e+0	Add SF5=PAR and E-LVL=0 (Fig.3, Table I)
12777.003	2-HE-3(N,G)2-HE-4	2.02e+1	0.00e+0	0.00e+0	9.00e+0	9.00e+0	Add SF5=PAR and E-LVL=0 (Fig.3, Table I)
13152.002	3-LI-6(N,P)2-HE-6	1.80e+0	3.18e+0	5.28e+0	1.18e+2	1.18e+2	Add SF5=PAR and E-LVL=0 (Fig.2, Table I)
13535.002	28-NI-64(N,P)27-CO-64	1.76e-1	6.63e+0	6.81e+0	9.00e+1	2.40e+2	Add SF5=PAR and E-LVL=0 ("0 MeV excitation")
20167.002	8-O-16(N,A)6-C-13	3.99e+0	2.36e+0	6.60e+0	1.36e+1	1.39e+1	Add SF5=PAR and E-LVL=0 (See EN-SEC)
20167.003	8-O-16(N,A)6-C-13	3.99e+0	2.36e+0	6.60e+0	1.41e+1	1.41e+1	Add SF5=PAR and E-LVL=0 (See EN-SEC)
20167.004	8-O-16(N,A)6-C-13	3.99e+0	2.36e+0	6.60e+0	1.36e+1	1.39e+1	Add SF5=PAR and E-LVL=3.1+3.7+3.9 MeV (See EN-SEC)
20167.005	8-O-16(N,A)6-C-13	3.99e+0	2.36e+0	6.60e+0	1.41e+1	1.41e+1	Add SF5=PAR and E-LVL=3.1+3.7+3.9 MeV (See EN-SEC)
20516.002	6-C-12(N,A)4-BE-9	1.68e+0	6.18e+0	8.01e+0	1.40e+1	1.40e+1	Add SF5=PAR and E-LVL=0 (Tableau I)
20516.003	6-C-12(N,A)4-BE-9	1.68e+0	6.18e+0	8.01e+0	1.40e+1	1.40e+1	Add SF5=PAR and E-LVL=0 (Tableau I)
20846.005	4-BE-9(N,A)2-HE-6	1.80e+0	6.65e-1	2.66e+0	1.41e+1	1.41e+1	Add SF5=PAR and E-LVL=0 (Fig.2)
21076.005	13-AL-27(N,A)11-NA-24-G	4.72e-1	3.25e+0	3.74e+0	1.48e+1	1.48e+1	SF4: remove -G, Add SF5=PAR and E-MIN=6 MeV (Fig.4)
21079.002	16-S-32(N,A)14-SI-29	1.27e+0	0.00e+0	0.00e+0	2.50e+0	2.90e+0	Add SF5=PAR and E-LVL=0 (abstract)
21102.032	26-FE-54(N,P)25-MN-54	5.50e-2	0.00e+0	0.00e+0	1.41e+1	1.41e+1	Add SF5=DI (Table I)
21394.002	50-SN-124(N,G)50-SN-125	2.80e-2	0.00e+0	0.00e+0	6.20e-5	6.20e-5	Add SF5=PAR and SF8 : REL -> RSD (Fig.5)
21823.003	6-C-12(N,A)4-BE-9	1.68e+0	6.18e+0	8.01e+0	8.00e+0	9.83e+0	Add SF5=PAR and E-LVL=0 (Table III)
22441.002	13-AL-27(N,P)12-MG-27	9.85e-1	1.90e+0	2.92e+0	6.27e+1	6.27e+1	SF3: P->X, SF4: 12-MG-27 -> 1-H-1 (Table 1)

22441.003	13-AL-27(N,D)12-MG-26	1.81e+0	6.27e+0	8.15e+0	6.27e+1	6.27e+1	SF3: D->X, SF4: 12-MG-26 -> 1-H-2 (Table 1)
22441.004	13-AL-27(N,T)12-MG-25	5.85e-1	1.13e+1	1.19e+1	6.27e+1	6.27e+1	SF3: T->X, SF4: 12-MG-25 -> 1-H-3 (Table 1)
22441.005	13-AL-27(N,A)11-NA-24	4.72e-1	3.25e+0	3.74e+0	6.27e+1	6.27e+1	SF3: A->X, SF4: 11-NA-24 -> 2-HE-4 (Table 1)
30146.003	45-RH-103(N,A)43-TC-100	1.72e-1	0.00e+0	0.00e+0	1.46e+1	1.46e+1	Add SF5=PAR and E-MIN=12 MeV (Fig.3b)
31315.003	10-NE-20(N,P)9-F-20	6.56e-1	6.56e+0	7.25e+0	1.41e+1	1.41e+1	Add SF5=PAR and E-MIN/MAX=2.5/6.7 MeV (Fig.5)
33025.008	13-AL-27(N,A)11-NA-24	4.72e-1	3.25e+0	3.74e+0	1.48e+1	1.48e+1	Add SF5=PAR and E-MIN/MAX=4/12 MeV (Fig.6)
40261.002	7-N-14(N,A)5-B-11-G	2.12e+0	1.70e-1	2.45e+0	4.90e+0	4.90e+0	Add SF5=PAR and E-LVL=0, remove -G in SF4 (Fig.3)
40261.003	7-N-14(N,A)5-B-11-M	2.12e+0	1.70e-1	2.45e+0	4.90e+0	4.90e+0	Add SF5=PAR and Q-VAL=-2.5 MeV, remove -M in SF4 (Fig.3)
40261.005	7-N-14(N,A)5-B-11-M	2.12e+0	1.70e-1	2.45e+0	4.90e+0	4.90e+0	Delete. Total alpha emission from the emulsion.
40953.002	50-SN-117(N,G)50-SN-118	1.23e+0	0.00e+0	0.00e+0	2.00e-7	3.00e-6	Add SF5=PAR and E=9.3 MeV (Fig.1)
A0832.003	26-FE-56(A,N)28-NI-59	3.39e-1	5.46e+0	5.82e+0	1.63e+1	1.63e+1	Add SF5=PAR and E-MIN/MAX=3.5/4.5 MeV (Fig.2a)
A0832.004	41-NB-93(A,N)43-TC-96	3.40e-2	7.34e+0	7.38e+0	1.63e+1	1.63e+1	Add SF5=PAR and E-MIN/MAX=2.5/4.5 MeV (Fig.2b)
A0832.005	49-IN-115(A,N)51-SB-118	3.10e-2	7.44e+0	7.47e+0	1.63e+1	1.63e+1	Add SF5=PAR and E-MIN/MAX=2.5/3.5 MeV (Fig.2c)
A0835.003	49-IN-115(A,N)51-SB-118	3.10e-2	7.44e+0	7.47e+0	1.63e+1	1.63e+1	Add SF5=PAR and E-MIN/MAX=2.5/5.0 MeV (Fig.2)
A0835.004	49-IN-115(A,X)0-NN-1				2.68e+7	2.68e+7	Add SF5=PAR and E-MIN/MAX=2.0/4.0 MeV (Fig.3)
A0835.005	49-IN-115(A,X)0-NN-1				2.68e+7	2.68e+7	Add SF5=PAR and E-MIN/MAX=4.0/8.0 MeV (Fig.3)
A0835.006	49-IN-115(A,X)0-NN-1				2.68e+7	2.68e+7	Add SF5=PAR and E-MIN/MAX=8.0/12.0 MeV (Fig.3)
A0835.007	49-IN-115(A,X)0-NN-1				2.68e+7	2.68e+7	Add SF5=PAR and E-MIN/MAX=12.0/18.0 MeV (Fig.3)
A0835.008	49-IN-115(A,X)0-NN-1				4.52e+7	4.52e+7	Add SF5=PAR and E-MIN/MAX=2.0/6.0 MeV (Fig.4)
A0835.009	49-IN-115(A,X)0-NN-1				4.52e+7	4.52e+7	Add SF5=PAR and E-MIN/MAX=6.0/16.0 MeV (Fig.4)
A0835.010	49-IN-115(A,X)0-NN-1				4.52e+7	4.52e+7	Add SF5=PAR and E-MIN/MAX=16.0/30.0 MeV (Fig.4)
A1094.008	2-HE-4(HE3,P)3-LI-6	2.19e+0	7.05e+0	1.09e+1	7.72e+0	1.78e+1	Add SF5=PAR and E-LVL=0 (Fig.9)
A1132.003	3-LI-7(HE3,P)4-BE-9	1.68e+0	0.00e+0	0.00e+0	1.40e+1	1.40e+1	Add SF5=PAR and E-LVL=0 (abstract)
A1314.005	1-H-3(A,N)3-LI-6	2.19e+0	1.11e+1	1.62e+1	2.72e+1	2.72e+1	Add SF5=PAR and E-LVL=0, SF7=RSD (Fig.3a)
A1384.003	3-LI-7(D,G)4-BE-9	1.68e+0	0.00e+0	0.00e+0	3.00e-1	3.00e-1	Add SF5=PAR and E-MIN=11.5 or 15.3 MeV (Fig.3)
A1384.006	3-LI-7(D,N)4-BE-8	3.03e+0	0.00e+0	0.00e+0	3.31e-1	3.92e-1	Add SF5=PAR and E-MIN=10 MeV (Fig.6)

A1384.007	3-LI-7(D,G)4-BE-9	1.68e+0	0.00e+0	0.00e+0	3.32e-1	4.00e-1	Add SF5=PAR and E-MIN=11.5 MeV (Fig.6)
A1453.004	3-LI-6(D,N)4-BE-7	4.29e-1	0.00e+0	0.00e+0	2.40e-1	8.40e-1	Add SF5=PAR and E-LVL=0.43 MeV (abstract)
A1470.004	3-LI-7(P,N)4-BE-7	4.29e-1	1.88e+0	2.37e+0	1.18e+1	2.60e+1	Add SF5=PAR and E-LVL=0 (Fig.6)
A1489.002	3-LI-6(A,G)5-B-10	7.18e-1	0.00e+0	0.00e+0	4.00e+0	5.26e+0	Delete. Background counting. (Fig.1a)
A1493.002	3-LI-7(HE3,A)3-LI-6	2.19e+0	0.00e+0	0.00e+0	5.50e+0	9.00e+0	Add SF5=PAR and E-LVL=0 (Fig.4)
A1495.004	3-LI-6(HE3,P)4-BE-8	3.03e+0	0.00e+0	0.00e+0	1.00e+0	5.00e+0	Add SF5=PAR and E-LVL=0 (Fig.2)
A1495.010	6-C-13(HE3,P)7-N-15	5.27e+0	0.00e+0	0.00e+0	1.41e+0	4.83e+0	Add SF5=PAR and E-LVL=0 (Fig.7)
A1495.011	6-C-13(HE3,P)7-N-15	5.27e+0	0.00e+0	0.00e+0	2.26e+0	4.52e+0	Add SF5=PAR and E-LVL=0 (Fig.8)
A1513.003	3-LI-6(D,P)3-LI-7	4.78e-1	0.00e+0	0.00e+0	3.00e-1	1.00e+0	Add SF5=PAR and E-LVL=0 (Figs.11-12)
A1542.002	3-LI-7(HE3,D)4-BE-8	3.03e+0	0.00e+0	0.00e+0	1.00e+0	2.54e+0	Add SF5=PAR and E-LVL=0 (abstract)
A1542.003	3-LI-7(HE3,D)4-BE-8	3.03e+0	0.00e+0	0.00e+0	1.20e+0	2.50e+0	Add SF5=PAR and E-LVL=0 (abstract)
A1545.004	3-LI-6(HE3,P)4-BE-8	3.03e+0	0.00e+0	0.00e+0	5.00e+0	1.70e+1	Add SF5=PAR and E-LVL=0 (Fig.4)
C0129.002	3-LI-6(D,G)4-BE-8	3.03e+0	0.00e+0	0.00e+0	2.00e+0	2.00e+0	Add SF5=PAR and E-LVL=0 (c.f.Fig.2)
C0129.004	3-LI-6(D,G)4-BE-8	3.03e+0	0.00e+0	0.00e+0	9.00e+0	9.00e+0	Add SF5=PAR and E-LVL=0 (c.f.Fig.2)
C0129.009	3-LI-6(D,G)4-BE-8	3.03e+0	0.00e+0	0.00e+0	7.00e+0	1.40e+1	Add SF5=PAR and E-LVL=0 (c.f.Fig.2)
C0246.002	8-O-16(P,A)7-N-13	2.37e+0	5.55e+0	8.06e+0	1.35e+1	1.81e+1	Add SF5=PAR and E-LVL=0 (Fig.3)
C0453.004	30-ZN-66(D,P)30-ZN-67	9.30e-2	0.00e+0	0.00e+0	8.82e+1	8.82e+1	Add SF5=PAR and E-LVL=0 (abstract)
C0453.005	30-ZN-66(D,P)30-ZN-67	9.30e-2	0.00e+0	0.00e+0	8.82e+1	8.82e+1	Add SF5=PAR and E-LVL=0 (abstract)
C0453.006	30-ZN-66(D,P)30-ZN-67	9.30e-2	0.00e+0	0.00e+0	8.82e+1	8.82e+1	Add SF5=PAR and E-LVL=0 (abstract)
C0453.007	30-ZN-66(D,P)30-ZN-67	9.30e-2	0.00e+0	0.00e+0	8.82e+1	8.82e+1	Add SF5=PAR and E-LVL=0 (abstract)
C0549.002	1-H-2(D,G)2-HE-4	2.02e+1	0.00e+0	0.00e+0	0.00e+0	8.00e-2	Add SF5=PAR and E-LVL=0 (i.e., $Q=E\gamma=23.8$ MeV)
C1030.004	8-O-16(D,A)7-N-14	2.31e+0	0.00e+0	0.00e+0	7.21e-1	2.12e+0	Add SF5=PAR and E-LVL=0 (Fig.5)
C1209.002	24-CR-52(D,P)24-CR-53	5.64e-1	0.00e+0	0.00e+0	4.39e+0	6.33e+0	Add SF5=PAR and E-LVL=0 (Fig.3)
C1311.002	62-SM-144(HE3,T)63-EU-144	3.33e-1	6.50e+0	6.84e+0	4.59e+1	4.59e+1	Add SF5=PAR and Q-VAL=-15.311 MeV
C1311.003	62-SM-147(HE3,T)63-EU-147	2.29e-1	1.78e+0	2.01e+0	4.59e+1	4.59e+1	Add SF5=PAR and Q-VAL=-15.125 MeV
C1311.004	62-SM-148(HE3,T)63-EU-148	2.33e-1	3.12e+0	3.35e+0	4.59e+1	4.59e+1	Add SF5=PAR and Q-VAL=-15.092 MeV

C1311.005	62-SM-149(HE3,T)63-EU-149	1.50e-1	7.28e-1	8.81e-1	4.59e+1	4.59e+1	Add SF5=PAR and Q-VAL=-15.015 MeV
C1311.006	62-SM-150(HE3,T)63-EU-150	4.20e-2	2.32e+0	2.37e+0	4.59e+1	4.59e+1	Add SF5=PAR and Q-VAL=-14.984 MeV
C1311.007	62-SM-152(HE3,T)63-EU-152	4.60e-2	1.93e+0	1.98e+0	4.59e+1	4.59e+1	Add SF5=PAR and Q-VAL=-14.923 MeV
C1311.008	62-SM-154(HE3,T)63-EU-154	6.80e-2	7.51e-1	8.20e-1	4.59e+1	4.59e+1	Add SF5=PAR and Q-VAL=-14.845 MeV
C1333.002	82-PB-208(6-C-12,A)86-RN-216	4.61e-1	2.58e+1	2.63e+1	1.87e+2	1.87e+2	SF3: A->X, SF4: 86-RN-216 -> 2-HE-4 (inclusive)
C1349.002	50-SN-112(P,T)50-SN-110	1.21e+0	1.06e+1	1.18e+1	4.20e+1	4.20e+1	Add SF5=PAR and E-EXC= 7.15+/-0.10 MeV (Table I)
C1349.004	50-SN-112(P,T)50-SN-110	1.21e+0	1.06e+1	1.18e+1	4.20e+1	4.20e+1	Add SF5=PAR and E-EXC= 7.15+/-0.10 MeV (Table I)
C1349.005	50-SN-116(P,T)50-SN-114	1.30e+0	8.70e+0	1.00e+1	4.20e+1	4.20e+1	Add SF5=PAR and E-EXC= 8.00+/-0.04 MeV (Table I)
C1349.006	50-SN-118(P,T)50-SN-116	1.29e+0	7.85e+0	9.16e+0	4.20e+1	4.20e+1	Add SF5=PAR and E-EXC= 8.40+/-0.04 MeV (Table I)
C1349.007	50-SN-120(P,T)50-SN-118	1.23e+0	7.17e+0	8.41e+0	4.20e+1	4.20e+1	Add SF5=PAR and E-EXC= 8.51+/-0.04 MeV (Table I)
C1349.008	50-SN-122(P,T)50-SN-120	1.17e+0	6.56e+0	7.74e+0	4.20e+1	4.20e+1	Add SF5=PAR and E-EXC= 8.53+/-0.08 MeV (Table I)
C1349.009	50-SN-124(P,T)50-SN-122	1.14e+0	6.00e+0	7.15e+0	4.20e+1	4.20e+1	Add SF5=PAR and E-EXC= 8.65+/-0.08 MeV (Table I)
C1361.002	6-C-13(HE3,P)7-N-15	5.27e+0	0.00e+0	0.00e+0	2.00e+0	4.50e+0	Add SF5=PAR and E-LVL=0 (Fig.1)
C1361.003	6-C-13(HE3,P)7-N-15	5.27e+0	0.00e+0	0.00e+0	1.88e+0	3.79e+0	Add SF5=PAR and E-LVL=0 (Fig.2)
C1363.005	7-N-14(A,P)8-O-17	8.71e-1	1.53e+0	2.65e+0	2.85e+0	2.88e+0	Add SF5=PAR and E-LVL=0 (See p1213 left)
C1365.003	8-O-16(D,A)7-N-14	2.31e+0	0.00e+0	0.00e+0	7.01e-1	1.06e+0	Add SF5=PAR and E-LVL=0 (W.Jiang, 2011-10-06)
C1428.002	50-SN-119(D,T)50-SN-118	1.23e+0	2.30e-1	1.48e+0	6.00e+0	7.00e+0	Add SF5=PAR and E-LVL=0 (Fig.1)
C1428.003	50-SN-119(D,T)50-SN-118	1.23e+0	2.30e-1	1.48e+0	6.00e+0	7.00e+0	Add SF5=PAR and E-LVL=0 (Fig.1)
C1428.004	42-MO-95(D,T)42-MO-94	8.71e-1	1.14e+0	2.02e+0	7.00e+0	7.00e+0	Add SF5=PAR and E-LVL=0 (Fig.2)
C1428.005	42-MO-95(D,T)42-MO-94	8.71e-1	1.14e+0	2.02e+0	7.00e+0	7.00e+0	Add SF5=PAR and E-LVL=0 (Fig.2)
C1428.006	42-MO-95(D,T)42-MO-94	8.71e-1	1.14e+0	2.02e+0	7.00e+0	7.00e+0	Add SF5=PAR and E-LVL=0 (Fig.2)
C1428.007	62-SM-149(D,T)62-SM-148	5.50e-1	0.00e+0	1.66e-1	8.00e+0	8.00e+0	Add SF5=PAR and E-LVL=0 (Fig.2)
C1428.008	62-SM-149(D,T)62-SM-148	5.50e-1	0.00e+0	1.66e-1	8.00e+0	8.00e+0	Add SF5=PAR and E-LVL=0 (Fig.2)
C1428.009	62-SM-149(D,T)62-SM-148	5.50e-1	0.00e+0	1.66e-1	8.00e+0	8.00e+0	Add SF5=PAR and E-LVL=0 (Fig.2)
C1461.002	6-C-12(A,G)8-O-16	6.05e+0	0.00e+0	0.00e+0	2.61e+0	6.60e+0	SF3: G -> EL, SF4: 8-O-16 -> 6-C-12 (abstract)
C1552.007	29-CU-63(D,HE3)28-NI-62	1.17e+0	6.49e-1	1.86e+0	9.00e+0	1.20e+1	SF3: Add PAR with E-LVL=0 (Fig.3)

C1552.008	29-CU-63(D,HE3)28-NI-62	1.17e+0	6.49e-1	1.86e+0	9.00e+0	1.20e+1	SF3: Add PAR with E-LVL=0 (Fig.3)
C1552.009	29-CU-63(D,HE3)28-NI-62	1.17e+0	6.49e-1	1.86e+0	9.00e+0	1.20e+1	SF3: Add PAR with E-LVL=0 (Fig.3)
C1552.010	29-CU-63(D,HE3)28-NI-62	1.17e+0	6.49e-1	1.86e+0	9.00e+0	1.20e+1	SF3: Add PAR with E-LVL=0 (Fig.3)
C1552.011	29-CU-63(D,HE3)28-NI-62	1.17e+0	6.49e-1	1.86e+0	9.00e+0	1.20e+1	SF3: Add PAR with E-LVL=0 (Fig.3)
D0031.002	3-LI-7(P,N)4-BE-7	4.29e-1	1.88e+0	2.37e+0	3.30e+0	7.00e+0	Use REACTION ratio (p,n1)/(p,n0) without REL in SF8
D0032.002	3-LI-7(P,N)4-BE-7	4.29e-1	1.88e+0	2.37e+0	1.96e+0	3.48e+0	Add SF5=PAR and E-LVL=0 (See CORRECTION)
D0032.003	3-LI-7(P,N)4-BE-7	4.29e-1	1.88e+0	2.37e+0	1.96e+0	3.25e+0	Add SF5=PAR and E-LVL=0 (See CORRECTION)
D0032.004	3-LI-7(P,N)4-BE-7	4.29e-1	1.88e+0	2.37e+0	1.96e+0	2.86e+0	Add SF5=PAR and E-LVL=0 (See CORRECTION)
D0035.002	3-LI-7(P,N)4-BE-7	4.29e-1	1.88e+0	2.37e+0	3.10e+0	4.90e+0	Add SF5=PAR and E-LVL=431 keV (Fig.6)
D0109.002	7-N-14(D,P)7-N-15	5.27e+0	0.00e+0	0.00e+0	8.10e-1	2.02e+0	Add SF5=PAR and E-LVL=0 (Table I)
D0130.002	26-FE-56(P,G)27-CO-57	1.22e+0	0.00e+0	0.00e+0	1.24e+0	1.26e+0	Add SF5=PAR and E-LVL=0 (Fig.2)
D0272.004	8-O-18(A,N)10-NE-21	3.51e-1	8.53e-1	1.28e+0	2.39e+0	5.03e+0	Add SF5=PAR, SF7=G(?) with E(-LVL)=0.35 MeV
D0435.002	13-AL-27(P,G)14-SI-28	1.78e+0	0.00e+0	0.00e+0	9.80e-1	1.75e+0	Add SF5=PAR and E-MIN=9 MeV (by Gurbich 2011-10-06)
E1239.002	1-H-1(5-B-11,N)6-C-11	2.00e+0	3.30e+1	5.68e+1	4.26e+1	5.79e+1	Add SF5=PAR and E-LVL=0 (by Chiba 2011-10-06)
E1239.004	1-H-1(5-B-11,N)6-C-11	2.00e+0	3.30e+1	5.68e+1	6.10e+1	6.10e+1	Add SF5=PAR and E-LVL=0 (by Chiba 2011-10-06)
E1253.002	12-MG-25(HE3,D)13-AL-26	2.28e-1	0.00e+0	0.00e+0	5.52e+1	5.52e+1	SF3: D -> EL, SF4: 13-AL-26, 12-MG-25 (Fig.4)
E1302.002	30-ZN-67(D,P)30-ZN-68	1.08e+0	0.00e+0	0.00e+0	6.00e+0	6.00e+0	Add SF5=PAR and E-LVL=0 (Fig.2a)
E1554.002	1-H-1(2-HE-8,P)2-HE-8	3.10e+0	0.00e+0	2.78e+1	5.76e+2	5.76e+2	SF3: P -> EL, SF4: 2-HE-8 -> 1-H-1, SF7: Add RSD? (Fig.3)
E1783.002	2-HE-3(D,P)2-HE-4	2.02e+1	0.00e+0	3.10e+0	1.40e+2	2.70e+2	Add SF5=PAR and E-LVL=0 (Fig.1)
E1783.003	2-HE-3(D,P)2-HE-4	2.02e+1	0.00e+0	3.10e+0	1.40e+2	2.70e+2	Add SF5=PAR and E-LVL=0 (Fig.1)
E1783.004	2-HE-3(D,P)2-HE-4	2.02e+1	0.00e+0	3.10e+0	1.40e+2	2.70e+2	Add SF5=PAR and E-LVL=0 (Fig.1)
E1859.002	9-F-19(P,A)8-O-16	6.05e+0	0.00e+0	0.00e+0	6.30e-1	1.59e+0	Add SF5=PAR and E-LVL=0 (Fig.2)
E1859.004	9-F-19(P,A)8-O-16	6.05e+0	0.00e+0	0.00e+0	7.29e-1	1.24e+0	Add SF5=PAR and E-LVL=0 (abstract)
E1859.005	9-F-19(P,A)8-O-16	6.05e+0	0.00e+0	0.00e+0	7.29e-1	7.29e-1	Add SF5=PAR and E-LVL=0 (abstract)
E1859.006	9-F-19(P,A)8-O-16	6.05e+0	0.00e+0	0.00e+0	7.84e-1	7.84e-1	Add SF5=PAR and E-LVL=0 (abstract)
E1859.007	9-F-19(P,A)8-O-16	6.05e+0	0.00e+0	0.00e+0	8.31e-1	8.31e-1	Add SF5=PAR and E-LVL=0 (abstract)

E1859.008	9-F-19(P,A)8-O-16	6.05e+0	0.00e+0	0.00e+0	8.45e-1	8.45e-1	Add SF5=PAR and E-LVL=0 (abstract)
E1859.009	9-F-19(P,A)8-O-16	6.05e+0	0.00e+0	0.00e+0	8.64e-1	8.64e-1	Add SF5=PAR and E-LVL=0 (abstract)
E1859.010	9-F-19(P,A)8-O-16	6.05e+0	0.00e+0	0.00e+0	9.68e-1	9.68e-1	Add SF5=PAR and E-LVL=0 (abstract)
E1859.011	9-F-19(P,A)8-O-16	6.05e+0	0.00e+0	0.00e+0	1.02e+0	1.02e+0	Add SF5=PAR and E-LVL=0 (abstract)
E1859.012	9-F-19(P,A)8-O-16	6.05e+0	0.00e+0	0.00e+0	1.05e+0	1.05e+0	Add SF5=PAR and E-LVL=0 (abstract)
E1859.013	9-F-19(P,A)8-O-16	6.05e+0	0.00e+0	0.00e+0	1.08e+0	1.08e+0	Add SF5=PAR and E-LVL=0 (abstract)
E1859.014	9-F-19(P,A)8-O-16	6.05e+0	0.00e+0	0.00e+0	1.12e+0	1.12e+0	Add SF5=PAR and E-LVL=0 (abstract)
E1859.015	9-F-19(P,A)8-O-16	6.05e+0	0.00e+0	0.00e+0	1.16e+0	1.16e+0	Add SF5=PAR and E-LVL=0 (abstract)
E1859.016	9-F-19(P,A)8-O-16	6.05e+0	0.00e+0	0.00e+0	1.20e+0	1.20e+0	Add SF5=PAR and E-LVL=0 (abstract)
E1859.017	9-F-19(P,A)8-O-16	6.05e+0	0.00e+0	0.00e+0	1.24e+0	1.24e+0	Add SF5=PAR and E-LVL=0 (abstract)
E1869.002	7-N-14(D,N)8-O-15	5.18e+0	0.00e+0	1.27e-1	1.53e+0	1.53e+0	Add SF5=PAR and E-LVL=0 (Fig.2)
E1869.003	7-N-14(D,N)8-O-15	5.18e+0	0.00e+0	1.27e-1	1.72e+0	1.72e+0	Add SF5=PAR and E-LVL=0 (Fig.2)
E1869.004	7-N-14(D,N)8-O-15	5.18e+0	0.00e+0	1.27e-1	1.97e+0	1.97e+0	Add SF5=PAR and E-LVL=0 (Fig.2)
E1869.005	7-N-14(D,N)8-O-15	5.18e+0	0.00e+0	1.27e-1	2.24e+0	2.24e+0	Add SF5=PAR and E-LVL=0 (Fig.2)
E1869.006	7-N-14(D,N)8-O-15	5.18e+0	0.00e+0	1.27e-1	2.54e+0	2.54e+0	Add SF5=PAR and E-LVL=0 (Fig.2)
E1869.007	7-N-14(D,N)8-O-15	5.18e+0	0.00e+0	1.27e-1	2.67e+0	2.67e+0	Add SF5=PAR and E-LVL=0 (Fig.2)
E1869.008	7-N-14(D,N)8-O-15	5.18e+0	0.00e+0	1.27e-1	2.90e+0	2.90e+0	Add SF5=PAR and E-LVL=0 (Fig.2)
E1870.003	7-N-14(D,N)8-O-15	5.18e+0	0.00e+0	1.27e-1	1.96e+0	1.96e+0	Add SF5=PAR and E-LVL=0 (Fig.5)
E1870.004	7-N-14(D,N)8-O-15	5.18e+0	0.00e+0	1.27e-1	1.96e+0	1.96e+0	Add SF5=PAR and E-LVL=0 (p844 left)
E1870.005	7-N-14(D,N)8-O-15	5.18e+0	0.00e+0	1.27e-1	1.96e+0	1.96e+0	Add SF5=PAR and E-LVL=0 (p844 left)
E2135.009	50-SN-118(P,N)51-SB-118	3.10e-2	4.48e+0	4.51e+0	2.97e+2	2.97e+2	Add SF5=PAR and E-LVL=0 (Fig.7)
F0004.002	3-LI-7(P,N)4-BE-7	4.29e-1	1.88e+0	2.37e+0	1.95e+0	7.00e+0	Add SF5=PAR and E-LVL=0 (Table I)
F0004.003	3-LI-7(P,N)4-BE-7	4.29e-1	1.88e+0	2.37e+0	1.95e+0	7.00e+0	Add SF5=PAR and E-LVL=0 (Table I)
F0020.003	3-LI-7(P,N)4-BE-7	4.29e-1	1.88e+0	2.37e+0	3.10e+0	5.00e+0	Delete. Repetition of F0020.002.
F0021.010	3-LI-7(D,T)3-LI-6	2.19e+0	1.28e+0	4.09e+0	1.50e+1	1.50e+1	Add SF5=PAR and E-LVL=0 (Fig.25)
F0095.007	4-BE-9(D,T)4-BE-8	3.03e+0	0.00e+0	0.00e+0	8.79e-1	2.35e+0	Add SF5=PAR and E-LVL=0 (Fig.6)

F0103.002	4-BE-9(D,P)4-BE-10	3.37e+0	0.00e+0	0.00e+0	1.74e+0	3.03e+0	Add SF5=PAR and E-LVL=0 (Figs.2-3)
F0103.003	4-BE-9(D,P)4-BE-10	3.37e+0	0.00e+0	0.00e+0	1.72e+0	3.02e+0	Add SF5=PAR and E-LVL=0 (Fig.4)
F0103.004	4-BE-9(D,P)4-BE-10	3.37e+0	0.00e+0	0.00e+0	1.73e+0	3.01e+0	Add SF5=PAR and E-LVL=0 (Fig.5)
F0120.003	4-BE-9(P,N)5-B-9	1.50e+0	2.06e+0	3.73e+0	2.28e+0	5.85e+0	SF3: N -> X, SF4: 5-B-9 -> 0-NN-1 (Fig.6)
F0143.002	4-BE-9(D,P)4-BE-10	3.37e+0	0.00e+0	0.00e+0	2.95e-1	6.20e-1	Add SF5=PAR and E-LVL=0 (abstract)
F0143.003	4-BE-9(D,T)4-BE-8	3.03e+0	0.00e+0	0.00e+0	2.95e-1	6.20e-1	Add SF5=PAR and E-LVL=0 (abstract)
F0143.004	4-BE-9(D,P)4-BE-10	3.37e+0	0.00e+0	0.00e+0	2.95e-1	6.20e-1	Add SF5=PAR and E-LVL=0 (abstract)
F0143.005	4-BE-9(D,T)4-BE-8	3.03e+0	0.00e+0	0.00e+0	2.95e-1	6.20e-1	Add SF5=PAR and E-LVL=0 (abstract)
F0143.006	4-BE-9(D,P)4-BE-10	3.37e+0	0.00e+0	0.00e+0	2.95e-1	6.20e-1	Add SF5=PAR and E-LVL=0 (abstract)
F0143.007	4-BE-9(D,T)4-BE-8	3.03e+0	0.00e+0	0.00e+0	2.95e-1	6.20e-1	Add SF5=PAR and E-LVL=0 (abstract)
F0153.003	4-BE-9(D,P)4-BE-10	3.37e+0	0.00e+0	0.00e+0	6.00e-1	2.70e+0	Add SF5=PAR and E-LVL=0 (Fig.2)
F0153.005	4-BE-9(D,T)4-BE-8	3.03e+0	0.00e+0	0.00e+0	7.26e-1	2.45e+0	Add SF5=PAR and E-LVL=0 (Fig.4)
F0153.006	4-BE-9(D,T)4-BE-8	3.03e+0	0.00e+0	0.00e+0	6.00e-1	2.20e+0	Add SF5=PAR and E-LVL=0 (Fig.5)
F0173.002	4-BE-9(P,D)4-BE-8	3.03e+0	0.00e+0	2.75e+0	5.20e+0	5.20e+0	Add SF5=PAR and E-LVL=0 (Fig.2)
F0180.002	4-BE-9(D,P)4-BE-10	3.37e+0	0.00e+0	0.00e+0	8.95e-1	2.48e+0	Add SF5=PAR and E-LVL=0 (abstract)
F0180.003	4-BE-9(D,P)4-BE-10	3.37e+0	0.00e+0	0.00e+0	9.00e-1	2.50e+0	Add SF5=PAR and E-LVL=0 (abstract)
F0201.002	4-BE-9(D,P)4-BE-10	3.37e+0	0.00e+0	0.00e+0	7.80e+0	7.80e+0	Add SF5=PAR and E-LVL=0 (Fig.1)
F0206.002	5-B-11(HE3,N)7-N-13	2.37e+0	0.00e+0	0.00e+0	4.99e+0	1.15e+1	Add SF5=PAR and E-LVL=0 (Fig.1)
F0206.003	5-B-11(HE3,N)7-N-13	2.37e+0	0.00e+0	0.00e+0	5.20e+0	1.20e+1	Add SF5=PAR and E-LVL=0 (Figs.2-3)
F0208.002	4-BE-9(HE3,N)6-C-11	2.00e+0	0.00e+0	0.00e+0	9.00e-1	1.90e+0	Add SF5=PAR and E-LVL=0 (Figs.1-2)
F0217.003	5-B-10(P,A)4-BE-7	4.29e-1	0.00e+0	0.00e+0	1.50e+0	1.50e+0	Add SF5=PAR and E-LVL=0 (abstract)
F0218.007	4-BE-9(D,N)5-B-10	7.18e-1	0.00e+0	0.00e+0	3.98e+0	1.75e+1	SF3: N -> X, SF4: 5-B-10 -> 0-NN-1 (2n is possible at Ed>5 MeV)
F0218.011	4-BE-9(D,N)5-B-10	7.18e-1	0.00e+0	0.00e+0	9.00e+0	1.80e+1	SF3: N -> X, SF4: 5-B-10 -> 0-NN-1 (2n is possible at Ed>5 MeV)
F0282.002	6-C-13(D,A)5-B-11	2.12e+0	0.00e+0	0.00e+0	3.35e+0	4.20e+0	Add SF5=PAR and E-LVL=0 (Fig.2)
F0303.008	5-B-11(P,A)4-BE-8	3.03e+0	0.00e+0	0.00e+0	3.80e+1	3.80e+1	Add SF5=PAR and E-LVL=0 (Fig.7)

F0303.009	6-C-12(P,A)5-B-9	1.50e+0	8.19e+0	9.82e+0	3.80e+1	3.80e+1	Add SF5=PAR and E-LVL=0 (Fig.9)
F0303.010	8-O-16(P,A)7-N-13	2.37e+0	5.55e+0	8.06e+0	3.80e+1	3.80e+1	Add SF5=PAR and E-LVL=0 (Fig.11)
F0303.011	9-F-19(P,A)8-O-16	6.05e+0	0.00e+0	0.00e+0	3.80e+1	3.80e+1	Add SF5=PAR and E-LVL=0 (Fig.12)
F0350.002	5-B-11(P,A)4-BE-8	3.03e+0	0.00e+0	0.00e+0	1.20e+1	3.80e+1	Add SF5=PAR and E-LVL=0 (abstract)
F0368.003	8-O-17(HE3,A)8-O-16	6.05e+0	0.00e+0	0.00e+0	7.03e+0	1.00e+1	Add SF5=PAR and E-LVL=0 (Fig.1)
F0376.002	4-BE-9(A,N)6-C-12	4.44e+0	0.00e+0	0.00e+0	1.75e+0	1.96e+0	Add SF5=PAR and E-LVL=0 (abstract)
F0410.002	5-B-10(D,N)6-C-11	2.00e+0	0.00e+0	0.00e+0	5.00e-1	8.00e-1	Add SF5=PAR and E-LVL=6.49 MeV (abstract)
F0410.004	6-C-13(D,N)7-N-14	2.31e+0	0.00e+0	0.00e+0	5.00e-1	8.00e-1	Add SF5=PAR and E-LVL=4.91 MeV (abstract)
F0481.002	4-BE-7(D,N)5-B-8	7.70e-1	2.69e+0	3.68e+0	5.80e+0	5.80e+0	Duplication of F0745.003
F0481.003	4-BE-7(D,N)5-B-8	7.70e-1	2.69e+0	3.68e+0	5.80e+0	5.80e+0	Duplication of F0745.002
F0492.002	5-B-11(P,A)4-BE-8	3.03e+0	0.00e+0	0.00e+0	1.62e-1	1.72e-1	Add SF5=PAR and E-LVL=0 (introduction)
F0492.003	5-B-11(P,A)4-BE-8	3.03e+0	0.00e+0	0.00e+0	1.62e-1	1.72e-1	Add SF5=PAR and E-LVL=0 (introduction)
F0545.004	12-MG-25(P,G)13-AL-26	2.28e-1	0.00e+0	0.00e+0	3.10e-1	1.84e+0	Add SF5=PAR and E-MIN/MAX=1.2/8.1 MeV (Figs.1a, 1b)
F0592.007	12-MG-24(A,P)13-AL-27	8.44e-1	1.87e+0	2.85e+0	2.31e+1	2.80e+1	Add SF5=PAR and E-LVL=0 (Fig.3)
F0605.002	18-AR-36(A,G)20-CA-40	3.35e+0	0.00e+0	0.00e+0	6.25e+0	1.68e+1	Add SF5=PAR and E-LVL=0 (Fig.2)
F0605.003	18-AR-36(A,G)20-CA-40	3.35e+0	0.00e+0	0.00e+0	6.65e+0	1.30e+1	Add SF5=PAR and E-LVL=0 (Fig.4)
F0622.003	15-P-31(P,A)14-SI-28	1.78e+0	0.00e+0	0.00e+0	1.47e+0	1.48e+0	Add SF5=PAR and E-LVL= (Fig.1b)
F0622.006	15-P-31(P,A)14-SI-28	1.78e+0	0.00e+0	0.00e+0	1.47e+0	1.82e+0	Add SF5=PAR and E-LVL=0 (Fig.2)
F0631.002	12-MG-24(A,P)13-AL-27	8.44e-1	1.87e+0	2.85e+0	1.02e+1	1.05e+1	Add SF5=PAR and E-LVL=0 (Fig.1)
F0631.003	13-AL-27(P,A)12-MG-24	1.37e+0	0.00e+0	0.00e+0	7.40e+0	7.64e+0	Add SF5=PAR and E-LVL=0 (Fig.1)
F0632.002	13-AL-27(P,G)14-SI-28	1.78e+0	0.00e+0	0.00e+0	1.32e+0	1.32e+0	Add SF5=PAR and E-MIN=4 MeV (Fig.1)
F0632.003	12-MG-24(A,G)14-SI-28	1.78e+0	0.00e+0	0.00e+0	2.86e+0	2.87e+0	Add SF5=PAR and E-MIN=4 MeV (Fig.4)
F0643.002	12-MG-24(A,G)14-SI-28	1.78e+0	0.00e+0	0.00e+0	4.18e+0	9.06e+0	Add SF5=PAR and E-LVL=0 (Fig.2)
F0643.003	12-MG-24(A,G)14-SI-28	1.78e+0	0.00e+0	0.00e+0	4.40e+0	8.60e+0	Add SF5=PAR and E-LVL=0 (Fig.3)
F0659.002	12-MG-24(A,G)14-SI-28	1.78e+0	0.00e+0	0.00e+0	1.20e+0	3.24e+0	Add SF5=PAR and E-MIN/MAX=8/13 MeV (Fig.2)
F0659.007	13-AL-27(P,G)14-SI-28	1.78e+0	0.00e+0	0.00e+0	2.00e-1	2.34e-1	Add SF5=PAR and E-MIN/MAX=7.5/10.5 MeV (Fig.11)

F0710.002	8-O-16(T,N)9-F-18	9.37e-1	0.00e+0	0.00e+0	1.65e+1	1.95e+1	Add SF5=PAR and E-LVL=0 (Table 2)
F0719.002	7-N-14(D,A)6-C-12	4.44e+0	0.00e+0	0.00e+0	2.25e+0	5.72e+0	Add SF5=PAR and E-LVL=0 (Fig.4)
F0719.010	7-N-14(D,P)7-N-15	5.27e+0	0.00e+0	0.00e+0	2.40e+0	3.20e+0	Add SF5=PAR and E-LVL=0 (Table in p979)
F0745.002	4-BE-7(D,N)5-B-8	7.70e-1	2.69e+0	3.68e+0	5.80e+0	5.80e+0	Add SF5=PAR and E-LVL=0 (p612 right)
F0745.003	4-BE-7(D,N)5-B-9	7.70e-1	2.69e+0	3.68e+0	5.80e+0	5.80e+0	Add SF5=PAR and E-LVL=0 (p612 right)
F0794.004	9-F-19(P,A)8-O-16	6.05e+0	0.00e+0	0.00e+0	1.20e+1	1.81e+1	Add SF5=PAR and E-LVL=0 (Fig.5)
F0796.002	6-C-12(D,N)7-N-13	2.37e+0	3.28e-1	3.09e+0	2.89e+0	3.16e+0	Add SF5=PAR and E-LVL=0 (Fig.5)
F0796.003	6-C-12(D,P)6-C-13	3.99e+0	0.00e+0	1.48e+0	2.93e+0	3.15e+0	Add SF5=PAR and E-LVL=0 (Fig.6)
F0796.004	6-C-12(D,N)7-N-13	2.37e+0	3.28e-1	3.09e+0	2.75e+0	3.24e+0	Add SF5=PAR and E-LVL=0 (Fig.7)
F0796.005	6-C-12(D,P)6-C-13	3.99e+0	0.00e+0	1.48e+0	2.75e+0	3.15e+0	Add SF5=PAR and E-LVL=0 (Fig.8)
F0823.002	3-LI-6(HE3,T)4-BE-6	1.67e+0	6.47e+0	8.98e+0	1.93e+1	3.93e+1	Add SF5=PAR and E-LVL=0 (Fig.2)
F0854.006	78-PT-192(HE3,A)78-PT-191	9.60e-2	0.00e+0	0.00e+0	2.60e-2	1.19e+0	SF5: Add PAR, EN -> E-LVL, Add EN=50 MeV (Table 1)
F0854.007	78-PT-192(HE3,A)78-PT-191	9.60e-2	0.00e+0	0.00e+0	1.50e-2	2.24e+0	SF5: Add PAR, EN -> E-LVL, Add EN=50 MeV (Table 2)
F0854.008	78-PT-195(HE3,A)78-PT-194	3.28e-1	0.00e+0	0.00e+0	1.31e-1	2.44e+0	SF5: Add PAR, EN -> E-LVL, Add EN=50 MeV (Table 3)
F0854.009	78-PT-197(HE3,A)78-PT-196	3.56e-1	0.00e+0	0.00e+0	5.80e-2	2.14e+0	SF5: Add PAR, EN -> E-LVL, Add EN=50 MeV (Table 4)
F0874.004	28-NI-58(P,G)29-CU-59	4.91e-1	0.00e+0	0.00e+0	4.70e+0	5.00e+0	Add SF5=PAR and E-MIN/MAX=3/5 MeV (See EN-SEC)
F0874.005	28-NI-58(P,G)29-CU-59	4.91e-1	0.00e+0	0.00e+0	4.70e+0	5.00e+0	Add SF5=PAR and E-MIN=6 MeV (See EN-SEC)
F0924.002	10-NE-20(P,G)11-NA-21	3.32e-1	0.00e+0	0.00e+0	1.12e+0	2.25e+0	Add SF5=PAR and E-MIN/MAX=3/4.6 MeV (Fig.1)
F0925.002	9-F-19(A,G)11-NA-23	4.40e-1	0.00e+0	0.00e+0	2.31e+0	3.74e+0	Add SF5=PAR and E=8.7 MeV (See EN-SEC)
F0925.003	9-F-19(A,G)11-NA-23	4.40e-1	0.00e+0	0.00e+0	2.31e+0	3.74e+0	Add SF5=PAR and E=1.27 MeV (See EN-SEC)
F0925.007	9-F-19(A,G)11-NA-23	4.40e-1	0.00e+0	0.00e+0	1.80e+0	2.30e+0	Add SF5=PAR and E-MIN=10.5 MeV (See EN-SEC)
F0929.004	6-C-12(A,P)7-N-15	5.27e+0	6.62e+0	1.37e+1	2.02e+1	2.28e+1	Add SF5=PAR and E-LVL=0 (Fig.5)
F0934.005	4-BE-9(P,D)4-BE-8	3.03e+0	0.00e+0	2.75e+0	1.65e+1	1.65e+1	Add SF5=PAR and E-LVL=0 MeV (p161, left)
F0934.009	9-F-19(P,D)9-F-18	9.37e-1	8.64e+0	9.63e+0	1.89e+1	1.89e+1	Add SF5=PAR and E-LVL=0 (p164 left)
F0934.011	13-AL-27(P,D)13-AL-26	2.28e-1	1.12e+1	1.15e+1	1.89e+1	1.89e+1	Add SF5=PAR and E-LVL-MAX=0.416 MeV (p164 right,[22])
F0946.004	22-TI-48(P,G)23-V-49	9.10e-2	0.00e+0	0.00e+0	1.00e+0	1.37e+0	Add SF5=PAR and E-MIN=2 MeV (Fig.1)

F0946.005	22-TI-50(P,G)23-V-51	3.20e-1	0.00e+0	0.00e+0	1.31e+0	1.41e+0	Add SF5=PAR and E-MIN/MAX=7.5/10.0 MeV (Fig.5)
F0947.002	18-AR-38(P,G)19-K-39	2.52e+0	0.00e+0	0.00e+0	1.26e+0	2.33e+0	Add SF5=PAR and E-MIN/MAX=2.0/9.0 MeV (See EN-SEC)
F0954.003	19-K-39(P,A)18-AR-36	1.97e+0	0.00e+0	6.99e-1	1.73e+0	3.23e+0	Add SF5=PAR and E-LVL=0 (Fig.4)
F0954.004	19-K-39(P,A)18-AR-36	1.97e+0	0.00e+0	6.99e-1	1.85e+0	2.88e+0	Add SF5=PAR and E-LVL=0 (Fig.6)
F0967.002	12-MG-25(P,G)13-AL-26	2.28e-1	0.00e+0	0.00e+0	9.12e-1	1.40e+0	Add SF5=PAR and E-MIN=1.0 MeV (See EN-SEC)
F0967.003	12-MG-25(P,G)13-AL-26	2.28e-1	0.00e+0	0.00e+0	1.36e+0	1.80e+0	Add SF5=PAR and E-MIN=2.8 MeV (See EN-SEC)
F1046.002	7-N-14(HE3,P)8-O-16	6.05e+0	0.00e+0	0.00e+0	2.50e+0	5.51e+0	Add SF5=PAR and E-LVL=0 (abstract)
F1061.004	9-F-19(A,P)10-NE-22	1.27e+0	0.00e+0	0.00e+0	2.54e+0	2.54e+0	Add SF5=PAR and E-LVL=0 (Fig.4)
F1061.005	9-F-19(A,P)10-NE-22	1.27e+0	0.00e+0	0.00e+0	2.64e+0	3.55e+0	Add SF5=PAR and E-LVL=0 (Fig.4)
F1061.006	9-F-19(A,P)10-NE-22	1.27e+0	0.00e+0	0.00e+0	2.74e+0	3.87e+0	Add SF5=PAR and E-LVL=0 (Figs.4-5)
F1061.007	9-F-19(A,P)10-NE-22	1.27e+0	0.00e+0	0.00e+0	3.04e+0	3.04e+0	Add SF5=PAR and E-LVL=0 (Fig.4)
F1061.008	9-F-19(A,P)10-NE-22	1.27e+0	0.00e+0	0.00e+0	3.17e+0	3.17e+0	Add SF5=PAR and E-LVL=0 (Fig.4)
F1061.009	9-F-19(A,P)10-NE-22	1.27e+0	0.00e+0	0.00e+0	3.31e+0	3.31e+0	Add SF5=PAR and E-LVL=0 (Fig.4)
F1061.010	9-F-19(A,P)10-NE-22	1.27e+0	0.00e+0	0.00e+0	3.36e+0	4.12e+0	Add SF5=PAR and E-LVL=0 (Figs.4-5)
F1061.011	9-F-19(A,P)10-NE-22	1.27e+0	0.00e+0	0.00e+0	3.65e+0	3.65e+0	Add SF5=PAR and E-LVL=0 (Fig.5)
F1061.012	9-F-19(A,P)10-NE-22	1.27e+0	0.00e+0	0.00e+0	4.19e+0	4.19e+0	Add SF5=PAR and E-LVL=0 (Fig.5)
F1061.013	9-F-19(A,P)10-NE-22	1.27e+0	0.00e+0	0.00e+0	4.34e+0	4.89e+0	Add SF5=PAR and E-LVL=0 (Fig.5)
F1061.014	9-F-19(A,P)10-NE-22	1.27e+0	0.00e+0	0.00e+0	4.50e+0	4.50e+0	Add SF5=PAR and E-LVL=0 (Fig.5)
F1061.015	9-F-19(A,P)10-NE-22	1.27e+0	0.00e+0	0.00e+0	4.62e+0	4.68e+0	Add SF5=PAR and E-LVL=0 (Fig.5)
F1061.016	9-F-19(A,P)10-NE-22	1.27e+0	0.00e+0	0.00e+0	4.70e+0	4.70e+0	Add SF5=PAR and E-LVL=0 (Fig.5)
F1061.017	9-F-19(A,P)10-NE-22	1.27e+0	0.00e+0	0.00e+0	4.83e+0	4.83e+0	Add SF5=PAR and E-LVL=0 (Fig.5)
F1079.006	6-C-13(D,P)6-C-14	6.09e+0	0.00e+0	1.64e-1	4.10e-1	4.10e-1	Add SF5=PAR and E-LVL=0 (abstract)
F1079.007	6-C-13(D,P)6-C-14	6.09e+0	0.00e+0	1.64e-1	5.10e-1	5.10e-1	Add SF5=PAR and E-LVL=0 (abstract)
F1079.008	6-C-13(D,P)6-C-14	6.09e+0	0.00e+0	1.64e-1	6.10e-1	7.10e-1	Add SF5=PAR and E-LVL=0 (abstract)
F1079.009	6-C-13(D,P)6-C-14	6.09e+0	0.00e+0	1.64e-1	8.10e-1	8.10e-1	Add SF5=PAR and E-LVL=0 (abstract)
F1098.006	17-CL-37(P,G)18-AR-38	2.17e+0	0.00e+0	0.00e+0	1.73e+0	1.74e+0	Add SF5=PAR and E-MIN=4.5 MeV (Fig.2)

L0063.004	6-C-12(G,P)5-B-11	2.12e+0	1.60e+1	1.81e+1	6.00e+1	8.00e+1	Add SF5=PAR and E-EXC-MIN/MAX=10/30 MeV (Fig.3)
M0543.002	20-CA-42(G,P)19-K-41	9.80e-1	1.03e+1	1.13e+1	1.55e+1	2.76e+1	Add SF5=PAR and E-MIN=3.7 MeV (Fig.1)
O0026.002	26-FE-56(P,N)27-CO-56	1.58e-1	5.45e+0	5.61e+0	2.28e+1	2.28e+1	Add SF5=PAR and E-LVL=3.58 MeV (IAS, Figs.1-2)
O0026.003	26-FE-56(P,N)27-CO-56	1.58e-1	5.45e+0	5.61e+0	2.28e+1	2.28e+1	Add SF5=PAR and E-LVL=1.45 MeV (AAS, Figs.1-2)
O1298.003	6-C-13(HE3,P)7-N-15	5.27e+0	0.00e+0	0.00e+0	2.00e+1	2.00e+1	SF3: P -> EL, SF4: 7-N-15 -> 6-C-13 (Fig.3)
O1394.002	1-H-2(54-XE-132,D)54-XE-132	6.68e-1	0.00e+0	4.44e+1	7.77e+2	7.77e+2	SF3: D -> EL, SF4: 54-XE-132 -> 1-H-2, SF7: Add D (Fig.1)
O1601.002	6-C-12(6-C-12,A)10-NE-20	1.63e+0	0.00e+0	0.00e+0	1.08e+1	1.10e+1	Add SF5=PAR and E-LVL=0 (Fig.1)
O1804.003	6-C-12(HE3,T)7-N-12	9.60e-1	2.17e+1	2.29e+1	2.00e+3	2.00e+3	Add SF5=PAR and Q-VAL(-RSL)=-270(150) MeV (p1747 left)
O1804.004	26-FE-54(HE3,T)27-CO-54	1.97e-1	8.73e+0	8.93e+0	2.00e+3	2.00e+3	Add SF5=PAR and Q-VAL(-RSL)=-270(150) MeV (p1747 left)
O1804.005	39-Y-89(HE3,T)40-ZR-89	5.88e-1	2.95e+0	3.56e+0	2.00e+3	2.00e+3	Add SF5=PAR and Q-VAL(-RSL)=-270(150) MeV (p1747 left)
O1876.003	5-B-11(P,A)4-BE-8	3.03e+0	0.00e+0	0.00e+0	2.18e+0	4.18e+0	Add SF5=PAR and E-LVL=0 (Table 2)
S0061.002	1-H-2(2-HE-6,N)3-LI-7	4.78e-1	0.00e+0	0.00e+0	3.64e+1	3.64e+1	Add SF5=PAR and E-LVL=0 + 0.48 MeV, SF7=RSD (p3, left)
T0050.002	1-H-3(P,G)2-HE-4	2.02e+1	0.00e+0	5.29e-1	8.34e+0	1.36e+1	Add SF5=PAR and E-LVL=0 (Fig.2)
T0052.002	48-CD-106(P,T)48-CD-104	6.58e-1	1.09e+1	1.16e+1	2.60e+1	2.60e+1	Add SF5=PAR and E-LVL=0 (Fig.2)
T0052.003	48-CD-108(P,T)48-CD-106	6.33e-1	9.87e+0	1.05e+1	2.60e+1	2.60e+1	Add SF5=PAR and E-LVL=0 (Fig.2)
T0052.004	48-CD-110(P,T)48-CD-108	6.33e-1	8.84e+0	9.48e+0	2.60e+1	2.60e+1	Add SF5=PAR and E-LVL=0 (Fig.2)
T0052.005	48-CD-112(P,T)48-CD-110	6.58e-1	7.96e+0	8.62e+0	2.60e+1	2.60e+1	Add SF5=PAR and E-LVL=0 (Fig.2)
T0052.006	48-CD-114(P,T)48-CD-112	6.18e-1	7.16e+0	7.79e+0	2.60e+1	2.60e+1	Add SF5=PAR and E-LVL=0 (Fig.2)
T0052.007	48-CD-116(P,T)48-CD-114	5.58e-1	6.41e+0	6.98e+0	2.60e+1	2.60e+1	Add SF5=PAR and E-LVL=0 (Fig.2)
T0078.002	40-ZR-90(HE3,T)41-NB-90	1.22e-1	6.34e+0	6.46e+0	1.70e+2	1.70e+2	Add SF8=MSC - partial for GDR excitation (Fig.8)
T0078.003	20-CA-40(HE3,T)21-SC-40	3.40e-2	1.54e+1	1.55e+1	1.70e+2	1.70e+2	Add SF8=MSC - partial for GDR excitation (Fig.8)
T0078.004	22-TI-46(HE3,T)23-V-46	8.01e-1	7.54e+0	8.39e+0	1.70e+2	1.70e+2	Add SF8=MSC - partial for GDR excitation (Fig.8)
T0078.005	14-SI-28(HE3,T)15-P-28	1.06e-1	1.59e+1	1.60e+1	1.70e+2	1.70e+2	Add SF8=MSC - partial for GDR excitation (Fig.8)
T0078.006	13-AL-27(HE3,T)14-SI-27	7.81e-1	5.37e+0	6.24e+0	1.70e+2	1.70e+2	Add SF8=MSC - partial for GDR excitation (Fig.8)
T0078.007	6-C-12(HE3,T)7-N-12	9.60e-1	2.17e+1	2.29e+1	1.70e+2	1.70e+2	Add SF8=MSC - partial for GDR excitation (Fig.8)
T0078.008	8-O-16(HE3,T)9-F-16	1.93e-1	1.84e+1	1.86e+1	1.70e+2	1.70e+2	Add SF8=MSC - partial for GDR excitation (Fig.8)

T0078.010	20-CA-40(HE3,T)21-SC-40	3.40e-2	1.54e+1	1.55e+1	1.30e+2	1.30e+2	Add SF8=MSC - partial for GDR excitation (Fig.11)
T0085.002	35-BR-79(HE3,T)36-KR-79	1.30e-1	1.71e+0	1.84e+0	2.45e+1	2.45e+1	Add SF5=PAR and Q-VAL=-10058+/-15 keV (IAS, p1776 right)
T0085.003	35-BR-81(HE3,T)36-KR-81	5.00e-2	3.11e-1	3.62e-1	2.45e+1	2.45e+1	Add SF5=PAR and Q-VAL=-10016+/-15 keV (IAS, p1776 right)
T0090.009	6-C-14(P,A)5-B-11	2.12e+0	8.40e-1	3.12e+0	2.84e+0	4.00e+0	Add SF5=PAR and E-LVL=0 (abstract)
T0271.002	14-SI-28(A,G)16-S-32	2.23e+0	0.00e+0	0.00e+0	4.82e+0	1.59e+1	Add SF5=PAR and E-LVL=0 (Fig.1)
T0271.003	14-SI-28(A,G)16-S-32	2.23e+0	0.00e+0	0.00e+0	5.70e+0	1.21e+1	Add SF5=PAR and E-LVL=0 (Fig.2)
T0271.004	14-SI-30(A,G)16-S-34	2.13e+0	0.00e+0	0.00e+0	3.60e+0	1.52e+1	Add SF5=PAR and E-LVL=0 (Fig.5)