

**Partial Elastic Scattering? (REACTION SF3=EL and SF5=\*PAR\*)**

(N. Otsuka, 2020-03-04, Memo CP-D/991)

Suspicious combination of SF3=EL and SF5=PAR in a REACTION code was found in 53 subentries. I checked each case against the source article and summarized proposed corrections as appended to this memo.

In 10256.004-005 and 40934.046-072, neutron strength functions are coded not only with L but also with J, and this could be a reason why the quantity has been expressed with SF5=PAR.

The following new data heading is proposed for update of O2232.002.

**Dictionary 24 (Data headings)**

E-EXC-C-ER (Error in excitation energy of initial compound nucleus)

**Combination of SF3=EL and SF5=PAR in REACTION codes (EXFOR Master Ver. 2020-03-02)**

(All items are registered in the EXFOR Feedback List.)

| <b>EXFOR #</b> | <b>REACTION</b>  | <b>Proposed corrections</b>            | <b>Remark</b>                |
|----------------|--|--|------------------------------|
| 10256.004      | (60-ND-145(N,EL),PAR,STF)  | Delete SF5=PAR. SF1 must be 60-ND-143. | J dependent S <sub>0</sub> . |
| 10256.005      | (60-ND-145(N,EL),PAR,STF)  | Delete SF5=PAR.                        | J dependent S <sub>0</sub> . |
| 12373.008      | ((92-U-235(N,EL)92-U-235,PAR,SIG)+<br>(92-U-235(N,INL)92-U-235,PAR,SIG)) | SF3 must be SCT.                       |                              |
| 12844.002      | (26-FE-54(N,EL)26-FE-54,PAR,POL/DA,,ANA)                                 | Delete SF5=PAR and E-LVL=0.0 MeV.      |                              |
| 12844.003      | (29-CU-65(N,EL)29-CU-65,PAR,POL/DA,,ANA)                                 | Delete SF5=PAR and E-LVL=0.0 MeV.      |                              |
| 22052.004.2    | (82-PB-207(N,EL),PAR,WID/STR)  | SF3 must be <b>G</b> .                 |                              |
| 22052.004.3    | (82-PB-207(N,EL),PAR,WID/STR)  | SF3 must be <b>G</b> .                 |                              |
| 22773.004      | (3-LI-6(N,EL)3-LI-6,PAR,DA)  | SF3 must be INL.                       |                              |
| 23030.009      | 6-C-12(N,EL)6-C-12,PAR,KER   | SF3 must be INL.                       |                              |
| 40934.046      | 52-TE-0(N,EL),PAR,STF  | Delete SF5=PAR.                        | J dependent S <sub>1</sub> . |
| 40934.047      | 51-SB-0(N,EL),PAR,STF  | Delete SF5=PAR.                        | J dependent S <sub>1</sub> . |
| 40934.048      | 48-CD-0(N,EL),PAR,STF  | Delete SF5=PAR.                        | J dependent S <sub>1</sub> . |
| 40934.049      | 47-AG-0(N,EL),PAR,STF  | Delete SF5=PAR.                        | J dependent S <sub>1</sub> . |
| 40934.050      | 46-PD-0(N,EL),PAR,STF  | Delete SF5=PAR.                        | J dependent S <sub>1</sub> . |
| 40934.051      | 45-RH-103(N,EL),PAR,STF  | Delete SF5=PAR.                        | J dependent S <sub>1</sub> . |
| 40934.052      | 44-RU-0(N,EL),PAR,STF  | Delete SF5=PAR.                        | J dependent S <sub>1</sub> . |
| 40934.053      | 42-MO-0(N,EL),PAR,STF  | Delete SF5=PAR.                        | J dependent S <sub>1</sub> . |
| 40934.054      | 40-ZR-0(N,EL),PAR,STF  | Delete SF5=PAR.                        | J dependent S <sub>1</sub> . |
| 40934.055      | 34-SE-0(N,EL),PAR,STF  | Delete SF5=PAR.                        | J dependent S <sub>1</sub> . |
| 40934.056      | 32-GE-0(N,EL),PAR,STF  | Delete SF5=PAR.                        | J dependent S <sub>1</sub> . |
| 40934.057      | 30-ZN-0(N,EL),PAR,STF  | Delete SF5=PAR.                        | J dependent S <sub>1</sub> . |
| 40934.058      | 28-NI-0(N,EL),PAR,STF  | Delete SF5=PAR.                        | J dependent S <sub>1</sub> . |
| 40934.059      | 26-FE-0(N,EL),PAR,STF  | Delete SF5=PAR.                        | J dependent S <sub>1</sub> . |
| 40934.060      | 22-TI-0(N,EL),PAR,STF  | Delete SF5=PAR.                        | J dependent S <sub>1</sub> . |
| 40934.061      | 48-CD-106(N,EL),PAR,STF  | Delete SF5=PAR.                        | J dependent S <sub>1</sub> . |

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| 40934.062   | 48-CD-108(N,EL),PAR,STF                              | Delete SF5=PAR.  | J dependent S <sub>1</sub> .      |
| 40934.063   | 48-CD-110(N,EL),PAR,STF                              | Delete SF5=PAR.  | J dependent S <sub>1</sub> .      |
| 40934.064   | 48-CD-112(N,EL),PAR,STF                              | Delete SF5=PAR.  | J dependent S <sub>1</sub> .      |
| 40934.065   | 48-CD-116(N,EL),PAR,STF                              | Delete SF5=PAR.  | J dependent S <sub>1</sub> .      |
| 40934.066   | 50-SN-116(N,EL),PAR,STF                              | Delete SF5=PAR.  | J dependent S <sub>1</sub> .      |
| 40934.067   | 50-SN-117(N,EL),PAR,STF                              | Delete SF5=PAR.  | J dependent S <sub>1</sub> .      |
| 40934.068   | 50-SN-118(N,EL),PAR,STF                              | Delete SF5=PAR.  | J dependent S <sub>1</sub> .      |
| 40934.069   | 50-SN-119(N,EL),PAR,STF                              | Delete SF5=PAR.  | J dependent S <sub>1</sub> .      |
| 40934.070   | 50-SN-120(N,EL),PAR,STF                              | Delete SF5=PAR.  | J dependent S <sub>1</sub> .      |
| 40934.071   | 50-SN-122(N,EL),PAR,STF                              | Delete SF5=PAR.  | J dependent S <sub>1</sub> .      |
| 40934.072   | 50-SN-124(N,EL),PAR,STF                              | Delete SF5=PAR.  | J dependent S <sub>1</sub> .      |
| 41316.019   | (26-FE-56(N,G),PAR,WID)/<br>(26-FE-56(N,EL),PAR,WID) | ?  | Not in the source article?        |
| A0945.003.1 | (7-N-14(P,EL),PAR,WID)                               | ?  | Question sent to Sergey Artemov.  |
| A1431.007   | 3-LI-6(D,EL)3-LI-6,PAR,DA                            | Delete SF5=PAR and E-LVL=0.0 MeV.                                    |                                   |
| A1431.008   | 3-LI-7(D,EL)3-LI-7,PAR,DA                            | Delete SF5=PAR and E-LVL=0.0 MeV.                                    |                                   |
| A1432.009   | 4-BE-9(D,EL)4-BE-9,PAR,DA,,REL                       | Delete SF5=PAR and E-LVL=0.0 MeV.                                    |                                   |
| C0075.002   | 12-MG-24(P,EL)12-MG-24,PAR,DA                        | Delete SF5=PAR and E-EXC=0. MeV in 001.                              | Treated as (p,p0) data in IBANDL. |
| C0075.003   | 12-MG-24(P,EL)12-MG-24,PAR,POL/DA,,ANA               | Delete SF5=PAR and E-EXC=0. MeV in 001.                              |                                   |
| C0179.004   | 7-N-14(P,EL)7-N-14,PAR,SIG                           | Delete SF5=PAR.  |                                   |
| C2269.002.1 | 16-S-31(P,G),PAR,WID                                 | Delete SF5=PAR and E-LVL values. Add resonance energy.               |                                   |
| C2269.002.2 | 16-S-31(P,EL),PAR,WID                                | Delete SF5=PAR and E-LVL values. Add resonance energy.               |                                   |
| C2269.002.3 | 16-S-31(P,EL),PAR,WID/STR                            | Delete SF5=PAR and E-LVL values. Add resonance energy.               |                                   |
| D0279.007   | 32-GE-74(3-LI-6,EL)32-GE-74,PAR,DA                   | SF3 must be INL.   |                                   |
| D0294.003   | 12-MG-24(P,EL)12-MG-24,PAR,DA                        | SF3 must be INL.   |                                   |
| F0655.004   | 14-SI-28(A,EL)14-SI-28,PAR,DA                        | SF3 must be INL. Add E-RSL=1 MeV (or E-CM -> E-CM-MIN/MAX)           |                                   |
| F0722.003   | 5-B-11(HE3,EL)5-B-11,PAR,DA                          | Elastic and inelastic data sets must be separated to two subentries. |                                   |
| F1095.003   | 5-B-11(P,EL)5-B-11,PAR,DA,,RSD                       | SF3 must be INL.   |                                   |
| O0192.002   | 82-PB-208(P,EL)82-PB-208,PAR,POL/DA                  | Delete SF5=PAR and E-LVL=0.00 MeV.                                   |                                   |

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| O1768.006 | 28-NI-64(A,EL)28-NI-64,PAR,DA | SF3 must be INL.  |  |
| O1768.007 | 30-ZN-66(A,EL)30-ZN-66,PAR,DA | SF3 must be INL.  |  |
| O2232.002 | 1-H-1(8-O-15,EL),PAR,WID      | Delete SF5=PAR. E-LVL -> E-EXC-CMP; E-LVL-ERR -> E-EXC-C-ER | A new heading E-EXC-C-ER is proposed in this memo. |

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