

Partial scattering quantity expressed by REACTION sum

(N. Otsuka, 2025-04-07, Memo CP-D/1130)

Note added to WP2025-25:

Many area 1 entries listed below were revised and retransmitted in PRELIM.1520 on 2 June.

It is now our practice to express the elastic scattering data including unresolved contribution of inelastic scattering portion as “partial scattering” without REACTION sum:

Example

(94-PU-239 (N, SCT) 94-PU-239, PAR, SIG)

rather than

(94-PU-239 (N, EL) 94-PU-239, , SIG) + (94-PU-239 (N, INL) 94-PU-239, PAR, SIG)

for $^{239}\text{Pu}(n,n0)^{239}\text{Pu} + ^{239}\text{Pu}(n,n1)^{239}\text{Pu}$ cross section (Ex=7.9 keV for the first excitation level of ^{239}Pu .)

There are still 45 datasets of partial scattering data coded by the REACTION sum, and I would like to suggest NNDC and NEA DB its cancellation.

Data #	REACTION (current)	REACTION (suggested)
10284.002	(74-W-0(N,EL)74-W-0,,DA)+ (74-W-0(N,INL)74-W-0,PAR,DA)	(74-W-0(N,SCT)74-W-0,PAR,DA)
10284.003	(74-W-0(N,EL)74-W-0,,DA,,LEG/2L2)+ (74-W-0(N,INL)74-W-0,PAR,DA,,LEG/2L2)	(74-W-0(N,SCT)74-W-0,PAR,DA,,LEG/2L2)
10284.005	(74-W-0(N,EL)74-W-0,,SIG)+ (74-W-0(N,INL)74-W-0,PAR,SIG)	(74-W-0(N,SCT)74-W-0,PAR,SIG)
10285.014	(22-TI-0(N,EL)22-TI-0,,DA)+ (22-TI-48(N,INL)22-TI-48,PAR,DA,,A)	(22-TI-0(N,SCT)22-TI-0,PAR,DA)
10286.002	(92-U-238(N,EL)92-U-238,,DA)+ (92-U-238(N,INL)92-U-238,PAR,DA)	(92-U-238(N,SCT)92-U-238,PAR,DA)
10286.003	(92-U-238(N,EL)92-U-238,,DA,,LEG/2L2)+ (92-U-238(N,INL)92-U-238,PAR,DA,,LEG/2L2)	(92-U-238(N,SCT)92-U-238,,DA,,LEG/2L2)
10286.004	(92-U-238(N,EL)92-U-238,,SIG)+ (92-U-238(N,INL)92-U-238,PAR,SIG)	(92-U-238(N,SCT)92-U-238,PAR,SIG)
10418.007	(51-SB-0(N,EL)51-SB-0,,SIG)+ (51-SB-0(N,INL)51-SB-121,PAR,SIG)	(51-SB-0(N,SCT)51-SB-0,PAR,SIG)
10418.008	(51-SB-0(N,EL)51-SB-0,,DA,,LEG/RS)+ (51-SB-0(N,INL)51-SB-121,PAR,DA,,LEG/RS)	(51-SB-0(N,SCT)51-SB-0,PAR,DA,,LEG/RS)
10631.002	(73-TA-0(N,EL)73-TA-0,,SIG)+ (73-TA-0(N,INL)73-TA-181,PAR,SIG)	(73-TA-0(N,SCT)73-TA-0,PAR,SIG)
10631.003	(73-TA-0(N,EL)73-TA-0,,DA,,LEG/RS)+ (73-TA-0(N,INL)73-TA-181,PAR,DA,,LEG/RS)	(73-TA-0(N,SCT)73-TA-0,PAR,DA,,LEG/RS)
10854.010	(3-LI-7(N,EL)3-LI-7,,DA)+ (3-LI-7(N,INL)3-LI-7,PAR,DA)	(3-LI-7(N,SCT)3-LI-7,PAR,DA)
10854.013	(3-LI-7(N,EL)3-LI-7,,SIG)+ (3-LI-7(N,INL)3-LI-7,PAR,SIG)	(3-LI-7(N,SCT)3-LI-7,PAR,SIG)
11022.002	(3-LI-0(N,EL)3-LI-0,,DA)+ (3-LI-0(N,INL)3-LI-7,PAR,DA)	(3-LI-0(N,SCT)3-LI-0,PAR,DA)
11022.007	(3-LI-7(N,EL)3-LI-7,,DA)+ (3-LI-7(N,INL)3-LI-7,PAR,DA)	(3-LI-7(N,SCT)3-LI-7,PAR,DA)
11442.003	(9-F-19(N,EL)9-F-19,,DA)+ (9-F-19(N,INL)9-F-19,PAR,DA)	(9-F-19(N,SCT)9-F-19,PAR,DA)

12378.002	(92-U-0(N,EL)92-U-0,,DA)+ (92-U-0(N,INL),PAR,DA)	(92-U-0(N,SCT)92-U-0,PAR,DA)
12378.003	(92-U-0(N,EL)92-U-0,,DA)+ (92-U-0(N,INL),PAR,DA)	(92-U-0(N,SCT)92-U-0,PAR,DA)
12658.006	(3-LI-6(N,EL)3-LI-6,,SIG)+ (3-LI-6(N,INL)3-LI-6,PAR,SIG)	(3-LI-6(N,SCT)3-LI-6,PAR,SIG)
12658.007	(3-LI-7(N,EL)3-LI-7,,SIG)+ (3-LI-7(N,INL)3-LI-7,PAR,SIG)	(3-LI-7(N,SCT)3-LI-7,PAR,SIG)
12762.002	(47-AG-0(N,EL),,DA,,AV)+ (47-AG-0(N,INL),PAR,DA,,AV)	(47-AG-0(N,SCT)47-AG-0,PAR,DA,,AV)
12805.003	(51-SB-0(N,EL),,DA,,AV)+ (51-SB-0(N,INL),PAR,DA,,AV)	(51-SB-0(N,SCT)51-SB-0,PAR,DA,,AV)
12805.004	(51-SB-0(N,EL),,DA)+ (51-SB-0(N,INL),PAR,DA)	(51-SB-0(N,SCT)51-SB-0,PAR,DA)
12986.006	(5-B-10(N,EL)5-B-10,,DA)+ (5-B-10(N,INL)5-B-10,PAR,DA)	(5-B-10(N,SCT)5-B-10,PAR,DA)
13161.004	(3-LI-7(N,EL)3-LI-7,,DA)+ (3-LI-7(N,INL)3-LI-7,PAR,DA)	(3-LI-7(N,SCT)3-LI-7,PAR,DA)
13506.006	(92-U-235(N,EL)92-U-235,,DA)+ (92-U-235(N,INL)92-U-235,PAR,DA)	(92-U-235(N,SCT)92-U-235,PAR,DA)
13585.002	(48-CD-0(N,EL)48-CD-0,,DA)+ (48-CD-0(N,INL)48-CD-0,PAR,DA)	(48-CD-0(N,SCT)48-CD-0,PAR,DA)
13637.003	(46-PD-0(N,EL)46-PD-0,,DA)+ (46-PD-0(N,INL)46-PD-0,PAR,DA)	(46-PD-0(N,SCT)46-PD-0,PAR,DA)
13638.002	(47-AG-0(N,EL)47-AG-0,,DA)+ (47-AG-0(N,INL)47-AG-0,PAR,DA)	(47-AG-0(N,SCT)47-AG-0,PAR,DA)
13984.002	(94-PU-239(N,EL)94-PU-239,,DA)+ (94-PU-239(N,INL)94-PU-239,PAR,DA)	(94-PU-239(N,SCT)94-PU-239,PAR,DA)
13984.004	(94-PU-239(N,EL)94-PU-239,,DA)+ (94-PU-239(N,INL)94-PU-239,PAR,DA)	(94-PU-239(N,SCT)94-PU-239,PAR,DA)
13984.007	(94-PU-239(N,EL)94-PU-239,,SIG)+ (94-PU-239(N,INL)94-PU-239,PAR,SIG)	(94-PU-239(N,SCT)94-PU-239,PAR,SIG)
20268.004	(3-LI-7(N,EL)3-LI-7,,DA)+ (3-LI-7(N,INL)3-LI-7,PAR,DA)	(3-LI-7(N,SCT)3-LI-7,PAR,DA)
20270.002	(5-B-10(N,EL)5-B-10,,DA)+ (5-B-10(N,INL)5-B-10,PAR,DA)	(5-B-10(N,SCT)5-B-10,PAR,DA)
20491.002	(11-NA-23(N,EL)11-NA-23,,DA)+ (11-NA-23(N,INL)11-NA-23,PAR,DA)	(11-NA-23(N,SCT)11-NA-23,PAR,DA)
20661.002	(11-NA-23(N,EL)11-NA-23,,DA)+ (11-NA-23(N,INL)11-NA-23,PAR,DA)	(11-NA-23(N,SCT)11-NA-23,PAR,DA)
20661.006	(11-NA-23(N,EL)11-NA-23,,DA)+ (11-NA-23(N,INL)11-NA-23,PAR,DA)	(11-NA-23(N,SCT)11-NA-23,PAR,DA)
21089.017	(11-NA-23(N,EL)11-NA-23,,SIG)+ (11-NA-23(N,INL)11-NA-23,PAR,SIG)	(11-NA-23(N,SCT)11-NA-23,PAR,SIG)
21147.045	(3-LI-7(N,EL)3-LI-7,,SIG)+ (3-LI-7(N,INL)3-LI-7,PAR,SIG)	(3-LI-7(N,SCT)3-LI-7,PAR,SIG)
21161.002	(9-F-19(N,EL)9-F-19,,DA)+ (9-F-19(N,INL)9-F-19,PAR,DA)	(9-F-19(N,SCT)9-F-19,PAR,DA)
21162.011	(3-LI-7(N,EL)3-LI-7,,DA)+ (3-LI-7(N,INL)3-LI-7,PAR,DA)	(3-LI-7(N,SCT)3-LI-7,PAR,DA)
21162.012	(3-LI-7(N,EL)3-LI-7,,DA)+ (3-LI-7(N,INL)3-LI-7,PAR,DA)	(3-LI-7(N,SCT)3-LI-7,PAR,DA)
21162.016	(3-LI-7(N,EL)3-LI-7,,SIG)+ (3-LI-7(N,INL)3-LI-7,PAR,SIG)	(3-LI-7(N,SCT)3-LI-7,PAR,SIG)
21439.002	(90-TH-232(N,EL)90-TH-232,,DA)+ (90-TH-232(N,INL)90-TH-232,PAR,DA)	(90-TH-232(N,SCT)90-TH-232,PAR,DA)
21439.004	(92-U-238(N,EL)92-U-238,,DA)+ (92-U-238(N,INL)92-U-238,PAR,DA)	(92-U-238(N,SCT)92-U-238,PAR,DA)