

(Note: This has not initially been distributed as a formal CP-Memo but was referred to elsewhere under this code.)

Proposals for additions and modifications

- 1) It is proposed to give reaction type codes in the "BRANCH" subfield of REACTION.

Reaction type codes are either formed from particle codes, for instance,

PG for (p, $\gamma$ ) reactions,  
 DP for (d,p) reactions,  
 HE3A for ( $^3\text{He}$ , $\alpha$ ) reactions,  
 DNP for (d,np) reactions,  
 PPG for (p,p' $\gamma$ ) reactions, etc.,

or chosen from DICTION-10. Additions to DICTION-10 proposed are:

RES for resonance experiments;  
 lTRS for single-nucleon transfer reactions in general,  
 such as ( $^{12}\text{C}$ ,  $^{13}\text{C}$ ) and ( $^{16}\text{O}$ ,  $^{15}\text{N}$ );  
 nTRS(n=2,3,..) for n-nucleon transfer reactions in general,  
 such as ( $^{18}\text{O}$ ,  $^{16}\text{O}$ ) and (p,  $^6\text{Li}$ ).

- 2) Additions to DICTION-22 (DETECTORS) proposed.

MAGSP magnetic spectrometer or spectrograph  
 PLATE nuclear plates  
 PSOLST position sensitive solid state detectors  
 SWPC position sensitive single-wire proportional counters  
 MWPC position sensitive multi-wire proportional counters

- 3) Additions to DICTION-25 (UNITS) proposed.

MU-B/SR microbarns per steradian  
 N-B/SR nanobarns per steradian

(In DICTION-25 there are now MICRO-B, MUB/SR/MEV, and MU-B/MEV.

The first two should be replaced by MU-B and MU-B/SR/MEV, respectively.)

An alternative may be to assume certain prefix as universal UNIT

modifiers. Possible examples are

MU- for  $10^{-6}$ ,  
 N- for  $10^{-9}$ ,  
 P- for  $10^{-12}$ ,  
 F- for  $10^{-15}$ .

Thus N-B/SR means nanobarns per steradian, N-SEC nanoseconds, N-AMP nanoamperes, etc.

- 4) Inclusion of some semi-numerical data should be considered in DATA-section.

Examples of semi-numerical data :

<0.01

1/2

7/2-

(blank) or X in order to distinguish unknown values from 0.0.

5) Technical or experimental information is included in BIB-section at the moment. Is it not better to have EXP-section and thus leave BIB-section for purely bibliographic information?

6) In REACTION, outgoing particles separated by + signs should be understood as

- (A) a positive indication of multiple emission  
and (B) a positive indication that the sequence of the outgoing particles is irrelevant or unknown.

Thus

- i) it is not necessary to write (P,D+G) etc., although gamma rays are also emitted in many differential cross section measurements;  
ii) (D,P) should be enough, if only protons are detected, even in a case of (d,p) reaction leading to unbound states of the final nucleus;  
iii) one writes, for example, (40-ZR-90(D,P)40-ZR-91(N)40-ZR-90,...)  
(a) if neutron groups emitted from unbound states in  $^{91}\text{Zr}$  are measured,  
or (b) if neutrons are detected in coincidence with proton groups leading to certain unbound states of the intermediate nucleus  $^{91}\text{Zr}$ ,

in other words,

- (c) if (d,p) reaction is known to precede the neutron emission;  
iv) one writes (40-ZR-90(D,N)41-NB-91(P)40-ZR-90,...)  
(a) if proton groups emitted from unbound states in  $^{91}\text{Nb}$  are measured,  
or (b) if neutrons are detected in coincidence with protons emitted from unbound states in  $^{91}\text{Nb}$ ,

in other words

- (c) if (d,n) reaction is known to precede the proton emission;  
v) one writes (40-ZR-90(D,N+P)40-ZR-90,...)  
(a) if the sequence is unknown,  
or (b) if deuteron breakup cross section in the field of  $^{90}\text{Zr}$  is measured,  
or (c) in other cases where positive indication of two-particle emission is required and the sequence is irrelevant or unknown.