Memo 4C-3/121

first issued: 3 March 1975
at 4C-Meeting
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To: Distribution

From: J. J. Schmidt and H. D. Lemmel

Subject: Non-neutron EXFOR developed at Karlsruhe

Please find attached copy of a letter from F. Kronenberger at Karlsruhe describing some modifications in the EXFOR format adopted at Karlsruhe for its extension to charged-particle induced reaction. Also attached are two sample EXFOR entries and some dictionary extensions. We submit this proposal for serious consideration at the 4C-Meeting.

The essential points are:

1. The iso-quant consists of two parts: the nucleus or reaction, and the parameter of this reaction given in the DATA table. The reaction is coded in a very straight-forward way as usually given in the literature, for example:

   (79-AU-197 (A,7N)81-TL-194M, parameter given), or:

   (39-Y-89 (P,P2N)39-Y-87G+39-Y-87M, parameter given).

   The "parameter given" is along the lines of Dict.14 of the classical EXFOR but excluding the reaction code from the first quantity subfield. The code "CRO" was introduced for the integral cross section of the reaction considered. To indicate to the computer programs the revised iso-quant format, the keyword "ISO-QUANT" was replaced by a new keyword "REACTION".

   In view of the large number of possible reactions, we regard the proposed split into "reaction" and "parameter given" as absolutely necessary, and we find the proposed format suitable and recommendable. The "parameter given" would require a dictionary close to but much shorter than the classical Dictionary 14. Details are to be worked out. In the "reaction" all particle codes from Dict.13 are permitted as projectile or as outgoing particles and any nuclide codes in the Z-S-A-M form could be included as well. An extension to ions is possible as well, perhaps in the form Z-S-A-3+ or Z-S-A-1- (the use of the same symbol for separator-hyphen and ion-charge-sign is cosmetically not nice but does not lead to ambiguities). Details are to be reviewed.

2. Under "PART-DET" not only the particle type actually detected is coded, but also the nuclide emitting this particle. Decay properties are given in free text under "PART-DET". (The half-life entered here is however not computer-readable, and this seems to be a disadvantage.)

3. The keyword "RESID-NUC" is cancelled. When the residual nucleus is not stable, its definition may be ambiguous. Instead relevant nuclei are coded under "REACTION" and "PART-DET".

4. The "STANDARD" reaction is given in the same format as the reaction measured. To indicate to the computer program the revised format, the keyword "STANDARD" was changed to "MONITOR". (Perhaps the term MONITOR is used in Charged-Particles physics more generally than in neutron physics?)
5. A number of dictionary additions were proposed for method information. Mr. Kronenberger said that he was not sure whether this is really needed in coded form. As long as this is not proven we are not in favor of extending the method dictionaries.

Clearance: J. J. Schmidt

Attachment

Distribution:

S. Pearlstein (NNCSC)	5x
L.Lesca (NDCC)	5x
V.Manokhin (CJD)	5x

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Note: This Memo was first issued at the 1975 4C-Meeting. To make sure that it gets the normal distribution it is issued again with only minor corrections of misprints. Some more details on the work at Karlsruhe were sent to C.Dunford (NDS-Memo 290 of 28 May 1975) for his consideration when formulating a final proposal on this matter.

26 February 1975

Translation of the letter from Mr. F. Kronenberger to J.J. Schmidt of 20 February 75.

Subject: Charged-Particle EXFOR Work at Karlsruhe

Dear Mr. Schmidt,

..... As enclosures I send you the extensions of the dictionaries and copies of the first two entries to our charged-particle data file. In the comments which are contained in the dictionary extensions, our wishes for changes, extensions and modifications are expressed.

Again, the most important changes compared to the EXFOR for neutron data are the following:

1. We have introduced the information keywords REACTION and MONITOR. They replace the keywords ISO-QUANT and STANDARD.

2. The information keywords PART-DET and FACILITY were modified as far as their information content is concerned. Thus, PART-DET contains Z-S-A(-M) of the product nuclide as well as of the outgoing particles if in the corresponding experiment they were both detected. FACILITY contains the type of the facility as well as its location.

The dictionaries 2, 10, 13, 16, 18, 21, 22, 23, 24 were extended.

We took the liberty to name us the center no. 6. On purpose, we did not choose "5". Please compare the enclosures with what I have written. ..... The entries 1 and 2 I shall send you as test cases in the form of a trans-tape.

With cordial grettings also from Dr. Muenzel,

F. Kronenberger

cc/Alain
Joe
Koichi
Pamela

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 EXFOR INTERNAL DICTIONARY UPDATE     750209
ALTER                                CHARGED PARTICLES, KARLSRUHE
*COMMENT 1)ISO-QUANT,CMPD-QUANT AND NUC-QUANT IS NOT USED IN THE
*          CASE OF CHARGED PARTICLE INDUCED REACTIONS. THESE
*          KEY WORDS ARE REPLACED BY 'REACTION'.
*        2)'PART-DET' IS OBLIGATORY, BECAUSE THE PARTICLE DETECTED
*          IS IN GENERAL NOT OBVIOUS FROM 'REACTION'. THE DECAY
*          PROPERTIES OF THE DETECTED PARTICLES SHOULD BE GIVEN.
*        3)THE HALF-LIFE OF THE DETECTED PARTICLE SHOULD BE GIVEN
*          UNDER 'PART-DET' AND NOT UNDER 'HALF-LIFE'.
*        4)THE PRODUCT NUCLEUS SHOULD BE MENTIONED UNDER
*          'REACTION' AND/OR 'PART-DET' BUT NOT UNDER 'RESID-NUC'.
REACTION   KEYWORD + CODED INFORMATION IN PARENTHESES OBLIGATORY
           FOR CHARGED PARTICLE INDUCED REACTIONS.
           UP TO 6 SUBFIELDS  (SF1(SF2,SF3)SF4,SF5,SF6)
           SF1 TARGET NUCLIDE Z-S-A(-MX) (SEE 'ISO-QUANT')
           SF2 PROJECTILE                (SEE DICT 13)
           SF3 OUTGOING PARTICLE         (SEE DICT 13)
           SF4 PRODUCT NUCLIDE Z-S-A(-MX)(SEE 'ISO-QUANT')
           SF5 QUANTITY MEASURED         (SEE DICT 10)
           SF6 MODIFIER                  (SEE DICT 12)
           SF1,SF2,SF3,SF4 AND SF5 OBLIGATORY. A FREE TEXT
           EXPLANATION HAS TO BE ADDED, IF ONE OR MORE OF THESE
           SUBFIELDS ARE BLANK.
           SUBFIELD 6 IS OPTIONAL
           THE RULES FOR COMBINATIONS OF DIFFERENT OUTGOING
           PARTICLES OR PRODUCT NUCLIDES ARE SIMILAR TO THE RULES
           APPLICAELE IN 'ISO-QUANT'. IF SF5 OR SF6 CONTAINS
           MORE THAN ONE CODE A SLASH IS USED FOR SEPARATION
MONITOR    KEYWORD OBLIGATORY EXCEPT WHEN NOT RELEVANT. CODED
           INFORMATION (UP TO 5 SUBFIELDS) AND FREE TEXT.
           SF1 TO SF4 REACTION USED AS MONITOR NOTATION AS GIVEN
           IN 'REACTION' SF1 TO SF4.
           SF5 TYPE OF DATA USED FOR MONITORING (SEE DICT 10)
           SF1 TO SF4 ARE OBLIGATORY, SF5 OPTIONAL.
CRO        (CROSS SECTION) CROSS SECTION FOR THE FORMATION OF THE
            SPECIFIED PRODUCT NUCLIDE OR THE SPECIFIED REACTION-
            TYPE (X,Y).
TTY        (THICK-TARGET-YIELD) THICK-TARGET-YIELD FOR THE
            SPECIFIED PRODUCT NUCLIDE
FCE        (FISSION CROSS SECTION)
FY         (FISSION YIELD) INDEPENT, CUMULATIVE AND ISOBARIC CHAIN
             YIELD SEE MODIFIER (DICT 12)
XR         (X-RAYS)
COMPLEX    (UNDEFINED OUTGOING PARTICLES) IF THE AUTHOR DOES NOT
            STATE THE KIND AND NUMBER OF THE OUTGOING PARTICLES
            IN CHARGED PARTICLE INDUCED REACTIONS OR IF AMBIGUITY
            EXISTS IN RESPECT TO THE REACTION TYPES INVOLVED
COMP       DATA OBTAINED FROM PUBLICATION BY THE COMPILER,
           CHECKED, BUT NOT APPROVED BY THE AUTHOR
CURVE      TABULAR DATA OBTAINED FROM A CURVE WITH A DATA-POINT
             READER
HILAC      (HEAVY ION LINEAR ACCELERATOR)
ISOCYC     (ISOCHRONOUS-CYCLOTRON)
SYNCYC     (SYNCHROCYCLOTRON)
REC        (CROSS SECTIONS OR YIELDS DETERMINED BY THE COLLECTION
           OF RECOILS)
DIDI       (RANGE OF RECOILS MEASURED WITH THICK-TARGET-THICK-
           CATCHER-ARRANGEMENT)
DIDU       (RANGE OF RECOILS MEASURED WITH THICK-TARGET-THINN-
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          CATCHER-ARRANGEMENT)                                                  3000000210000006
DUDI      (RANGE OF RECOILS MEASURED WITH THINN-TARGET-THICK-                   3000000210000007
          CATCHER-ARRANGEMENT)                                                  3000000210000008
DUDU      (RANGE OF RECOILS MEASURED WITH THINN-TARGET-THINN-                   3000000210000009
          CATCHER-ARRANGEMENT)                                                  3000000210000010
HEJET     (COLLECTION BY-HE-JET)                                                3000000210000011
CHSEP     (CHEMICAL SEPARATION)                                                 3000000210000012
ASEP      (SEPARATION BY MASS SEPARATOR)                                        3000000210000013
SITA      (SINGLE TARGET IRRADIATIONS)                                          3000000210000014
STTA      (STACKED TARGET IRRADIATIONS)                                         3000000210000015
INTB      (IRRADIATIONS WITH INTERNAL BEAM)                                     3000000210000016
EXTB      (IRRADIATIONS WITH EXTERNAL BEAM)                                     3000000210000017
EDEG      (ENERGY-DEGRADATION BY FOILS) ENERGY-DEGRADATION OF THE               3000000210000018
           BEAM BEFORE HITTING THE TARGET ARRANGEMENT                           3000000210000019
MONSEP    (SEPARATE MONITORFOIL)                                                3000000210000020
MONMIX    (MIXED MONITOR) MONITOR AND TARGET COMBINED AS CHEMICAL               3000000210000021
           COMPOUND OR MIXTURE OR MONITOR REACTION HAS THE SAME                 3000000210000022
           TARGET NUCLIDE AS THE REACTION GIVEN UNDER 'REACTION'.               3000000210000023
BCINT     (BEAM CURRENT INTEGRATED) CODEWORD USED ONLY IF VALUES                3000000210000024
           GIVEN IN THE DATA SECTION ARE BASED ON THIS                          3000000210000025
           MEASUREMENT                                                          3000000210000026
GEM       (GEIGER MUELLER COUNTER)                                              3000000220000011
SIC       (SI-SOLID-STATE DETECTOR)                                             3000000220000041
*COMMENT 'SCIN' SHOULD BE USED FOR SOLID SCINTILLATION COUNTER,                 3000000220000091
*          LIKE NAJ, ONLY.                                                      3000000220000092
LISCIN    (LIQUID SCINILLATION COUNTER)                                         3000000220000093
ARCOI     (ANNIHILATION RADIATION COINCIDENCE COUNTER)                          3000000220000181
GAREA     (PHOTOPEAK-AREA ANALYSIS)                                             3000000230000021
INTANG    (INTEGRATION OF ANGULAR DISTRIBUTION)                                 3000000230000061
*COMMENT  THE MEANING OF THE CODE 'EN' SHOULD BE EXTENDED TO                    3000000240000011
*         'ENERGY OF INCIDENT PROJECTILE, LAB-SYSTEM'. THIS                     3000000240000092
*         EXTENSION SHOULD ALSO APPLY TO THE OTHER CODEWORDS,                   3000000240000093
*         WHICH CONTAIN 'EN', LIKE 'EN-CM'.                                     3000000240000094
MISC3      THIRD MISCELLANEOUS COLUMN -IF MORE THAN ONE IS GIVEN                3000000240001381
             SAME USAGE AS -MISC-(SEE ABOVE)                                    3000000240000082
MISC4      FOURTH MISCELLANEOUS COLUMN -IF MORE THAN ONE IS GIVEN               3000000240000083
            . SAME USAGE AS -MISC-(SEE ABOVE)                                   3000000240000084
ENDALTER                                                                        0000000
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 NUMBER OF RECORDS CHANGED =      0
 NUMBER OF RECORDS DELETED =      0
 NUMBER OF RECORDS INSERTED =    95
 NUMBER OF RECORDS OBSOLETED =    0
 NUMBER OF RECORDS EXTINCTED =    0
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DICTION              1      700703   SYSTEM-IDENTIFIERS                    3000000100001
ENDDICTION          45                                                     3000000199999
DICTION              2      750209 INFORMATION IDENTIFIER KEYWORDS         3000000200010
TITLE       KEYWORD OBLIGATORY EXCEPT WHEN NOT RELEVANT.                   3000000200002
            FREE TEXT ONLY.                                                3000000200003
AUTHOR      KEYWORD + ALL NAMES IN PARENTHESES OBLIGATORY.                 3000000200004
INSTITUTE   KEYWORD + CODED INFORMATION IN PARENTHESES OBLIGATORY.         3000000200005
            SEE DICTIONARY 3 FOR INSTITUTES.                               3000000200006
EXP-YEAR    KEYWORD OPTIONAL.  IF KEYWORD PRESENT, THEN TWO DIGIT          3000000200007
            YEAR IN PARENTHESES OBLIGATORY.                                3000000200008
REFERENCE   KEYWORD + CODED INFORMATION IN PARENTHESES OBLIGATORY.         3000000200009
            UP TO 6 SUBFIELDS IN CODE.                                     3000000200010
            SEE DICTIONARY 4 FOR REFERENCE-TYPE                            3000000200011
            SEE DICTIONARY 5 FOR JOURNALS                                  3000000200012
            SEE DICTIONARY 6 FOR REPORTS                                   3000000200013
            SEE DICTIONARY 7 FOR CONFERENCES AND BOOKS                     3000000200014
ISO-QUANT   KEYWORD + CODED INFORMATION IN PARENTHESES OBLIGATORY.         3000000200015
            ISO-QUANT MAY BE REPLACED BY CMPD-QUANT OR NUC-QUANT.          3000000200016
            UP TO 5 SUBFIELDS IN CODE.                                     3000000200017
            THE ISOTOPE IS GIVEN IN THE FIRST SUBFIELD IN THE FORM         3000000200018
             (Z-S-A) IF IT IS IN GROUND-STATE, RESPECTIVELY                3000000200019
             (Z-S-A-M1) IF IT IS IN THE FIRST OR                           3000000200020
             (Z-S-A-M2) IF IN THE SECOND METASTABLE STATE.                 3000000200021
             (Z-S-A-M)  IF IT IS IN A METASTABLE STATE AND UN-             3000000200022
           CERTAIN WHETHER FIRST OR SECOND ETC.                            3000000200023
           SEE DICTIONARY 8 FOR ELEMENT-SYMBOLS                            3000000200024
           SEE DICTIONARY 10 FOR PROCESS/PARAMETER                         3000000200025
           SEE DICTIONARY 11 FOR FUNCTION                                  3000000200026
           SEE DICTIONARY 12 FOR MODIFIER                                  3000000200027
           SEE DICTIONARY 13 FOR PARTICLE                                  3000000200028
           SEE DICTIONARY 14 FOR QUANTITY                                  3000000200029
CMPD-QUANT  REPLACES ISO-QUANT WHEN QUANTITY GIVEN REFERS TO A             3000000200030
            CHEMICAL COMPOUND. CODED INFORMATION IN PARENTHESES            3000000200031
            OBLIGATORY.  CODING FORMALISM SAME AS UNDER ISO-QUANT,         3000000200032
            BUT A-NUMBER REPLACED BY 3-CHARACTER COMPOUND CODE.            3000000200033
            SEE DICTIONARY 9 FOR COMPOUNDS                                 3000000200034
NUC-QUANT   REPLACES ISO-QUANT WHEN QUANTITY GIVEN DOES NOT REFER          3000000200035
            TO THE NEUTRON-TARGET NUCLEUS.  CODED INFORMATION IN           3000000200036
            PARENTHESES OBLIGATORY.  CODING-FORMALISM SAME AS UNDER        3000000200037
            ISO-QUANT.                                                     3000000200038
*COMMENT 1)ISO-QUANT,CMPD-QUANT AND NUC-QUANT IS NOT USED IN THE           3000000200039I
*           CASE OF CHARGED PARTICLE INDUCED REACTIONS. THESE              3000000200040I
*           KEY WORDS ARE REPLACED BY 'REACTION'.                          3000000200041I
*         2)'PART-DET' IS OBLIGATORY, BECAUSE THE PARTICLE DETECTED        3000000200042I
*           IS IN GENERAL NOT OBVIOUS FROM 'REACTION'. THE DECAY           3000000200043I
*           PROPERTIES OF THE DETECTED PARTICLES SHOULD BE GIVEN.          3000000200044I
*         3)THE HALF-LIFE OF THE DETECTED PARTICLE SHOULD BE GIVEN         3000000200045I
*           UNDER 'PART-DET' AND NOT UNDER 'HALF-LIFE'.                    3000000200046I
*         4)THE PRODUCT NUCLEUS SHOULD BE MENTIONED UNDER                  3000000200047I
*           'REACTION' AND/OR 'PART-DET' BUT NOT UNDER 'RESID-NUC'.        3000000200048I
REACTION    KEYWORD + CODED INFORMATION IN PARENTHESES OBLIGATORY          3000000200049I
            FOR CHARGED PARTICLE INDUCED REACTIONS.                        3000000200050I
            UP TO 6 SUBFIELDS  (SF1(SF2,SF3)SF4,SF5,SF6)                   3000000200051I
            SF1 TARGET NUCLIDE Z-S-A(-MX) (SEE 'ISO-QUANT')                3000000200052I
            SF2 PROJECTILE                (SEE DICT 13)                    3000000200053I
            SF3 OUTGOING PARTICLE         (SEE DICT 13)                    3000000200054I
            SF4 PRODUCT NUCLIDE Z-S-A(-MX)(SEE 'ISO-QUANT')                3000000200055I
            SF5 QUANTITY MEASURED         (SEE DICT 14)                    3000000200056I
            SF6 MODIFIER                  (SEE DICT 12)                    3000000200057I
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                SF1,SF2,SF3,SF4 AND SF5 OBLIGATORY. A FREE TEXT          3000000200058I
                EXPLANATION HAS TO BE ADDED, IF ONE OR MORE OF THESE     3000000200059I
                SUBFIELDS ARE BLANK.                                     3000000200060I
                SUBFIELD 6 IS OPTIONAL                                   3000000200061I
                THE RULES FOR COMBINATIONS OF DIFFERENT OUTGOING          3000000200062I
                PARTICLES OR PRODUCT NUCLIDES ARE SIMILAR TO THE RULES   3000000200063I
                APPLICABLE IN 'ISO-QUANT'. IF SF5 OR SF6 CONTAINS        3000000200064I
                MORE THAN ONE CODE A SLASH IS USED FOR SEPARATION        3000000200065I
STANDARD        KEYWORD OBLIGATORY EXCEPT WHEN NOT RELEVANT. FREE TEXT   3000000200066
                OR CODED INFORMATION IN PARENTHESES PLUS POSSIBLY FREE   3000000200067
                TEXT. CODING FORMALISM SAME AS UNDER ISO-QUANT.          3000000200068
MONITOR         KEYWORD OBLIGATORY EXCEPT WHEN NOT RELEVANT. CODED       3000000200069I
                INFORMATION (UP TO 5 SUBFIELDS) AND FREE TEXT.           3000000200070I
                SF1 TO SF4 REACTION USED AS MONITOR NOTATION AS GIVEN    3000000200071I
                IN 'REACTION' SF1 TO SF4.                                3000000200072I
                SF5 TYPE OF DATA USED FOR MONITORING (SEE DICT 10)       3000000200073I
                SF1 TO SF4 ARE OBLIGATORY, SF5 OPTIONAL.                 3000000200074I
                ========================================================3000000200075
                'METHOD', 'FACILITY', 'DETECTOR', 'ANALYSIS'.            3000000200076
                AT LEAST ONE OF THESE KEYWORDS MUST BE PRESENT. IF A     3000000200077
                PERTINENT CODE IN THE RELEVANT DICTIONARY EXISTS,        3000000200078
                THEN KEYWORD AND CODE SHOULD BE GIVEN.                   3000000200079
METHOD          KEYWORD OBLIGATORY EXCEPT WHEN NOT RELEVANT. FREE TEXT   3000000200080
                OR CODED INFORMATION IN PARENTHESES PLUS FREE TEXT.      3000000200081
                SEE DICTIONARY 21                                        3000000200082
FACILITY        KEYWORD OBLIGATORY EXCEPT WHEN NOT RELEVANT. FREE TEXT   3000000200083
                OR CODED INFORMATION IN PARENTHESES PLUS FREE TEXT.      3000000200084
                SEE DICTIONARY 18                                        3000000200085
DETECTOR        KEYWORD OBLIGATORY EXCEPT WHEN NOT RELEVANT. FREE TEXT   3000000200086
                OR CODED INFORMATION IN PARENTHESES PLUS FREE TEXT.      3000000200087
                SEE DICTIONARY 22                                        3000000200088
ANALYSIS        KEYWORD OBLIGATORY EXCEPT WHEN NOT RELEVANT. FREE TEXT   3000000200089
                OR CODED INFORMATION IN PARENTHESES PLUS FREE TEXT.      3000000200090
                SEE DICTIONARY 23                                        3000000200091
                ========================================================3000000200092
N-SOURCE        KEYWORD OPTIONAL. FREE TEXT OR CODED INFORMATION IN      3000000200093
                PARENTHESES PLUS FREE TEXT                               3000000200094
                SEE DICTIONARY 19                                        3000000200095
INC-SPECT       KEYWORD OPTIONAL. FREE TEXT ONLY.                        3000000200096
SAMPLE          KEYWORD OPTIONAL. FREE TEXT ONLY.                        3000000200097
GEOMETRY        OBSOLETE.(MAY EXIST IN ENTRIES FROM 1972 OR EARLIER)     3000000200098
PART-DET        THE PARTICLE DETECTED MUST BE EVIDENT EITHER FROM        3000000200099
                'ISO-QUANT' OR FROM 'PART-DET'. IF KEYWORD PRESENT,      3000000200100
                THEN CODED INFORMATION IN PARENTHESES OBLIGATORY.        3000000200101
                SEE DICTIONARY 13                                        3000000200102
EN-SEC          KEYWORD OPTIONAL. FREE TEXT ONLY.                        3000000200103
RESID-NUC       KEYWORD OPTIONAL. FREE TEXT ONLY.                        3000000200104
CORRECTION      KEYWORD OPTIONAL. FREE TEXT ONLY                         3000000200105
ERR-ANALYS      KEYWORD OBLIGATORY. FREE TEXT OR HEADING OF RELEVANT     3000000200106
                ERROR-COLUMN IN PARENTHESES PLUS FREE TEXT               3000000200107
COMMENT         KEYWORD OPTIONAL. FREE TEXT ONLY                         3000000200108
HALF-LIFE       KEYWORD OPTIONAL TO EXPLAIN HALF-LIVES GIVEN IN COMMON   3000000200109
                OR DATA. FREE TEXT OR (HL1,Z-S-A-M) WITH OR WITHOUT      3000000200110
                FREE TEXT.                                               3000000200111
MISC-COL        KEYWORD OPTIONAL. IF KEYWORD PRESENT THEN COLUMN-        3000000200112
                HEADING 'MISC', 'MISC1' OR 'MISC2' ETC. IN PARENTHESES   3000000200113
                IS OBLIGATORY.                                           3000000200114
FLAG            KEYWORD OPTIONAL. IF KEYWORD PRESENT THEN THE FLAG       3000000200115
                NUMBER IN PARENTHESES IS OBLIGATORY.                     3000000200116
TABLE-NR        KEYWORD OPTIONAL. IF KEYWORD PRESENT THEN THE TABLE-     3000000200117
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          NUMBER IN PARENTHESES IS OBLIGATORY.                                  3000000200118
STATUS    KEYWORD OBLIGATORY EXCEPT WHEN THE SOURCE OF THE DATA                 3000000200119
          IS GIVEN UNDER 'REFERENCE' AND NO OTHER 'STATUS'                      3000000200120
          INFORMATION APPLIES.  CODE FROM DICT 16 IN PARENTHESES                3000000200121
          PLUS FREE TEXT.  FREE TEXT ALONE IF NO CODE APPLIES.                  3000000200122
HISTORY   KEYWORD + CODED INFORMATION IN PARENTHESES OBLIGATORY                 3000000200123
          GIVING A DATE IN THE FORM YYMMDD PLUS A ONE CHARACTER                 3000000200124
          ACTION-CODE. THE DATE IS OBLIGATORY, THE ACTION-CODE IS               3000000200125
          OPTIONAL. THE ALLOWED ACTION-CODES ARE FOLLOWING                      3000000200126
          R - DATA RECEIVED AT THE CENTRE                                       3000000200127
          C - COMPILED AT THE CENTRE                                            3000000200128
          L - ENTERED INTO LIBRARY                                              3000000200129
          T - CONVERTED FROM PREVIOUS COMPILATION                               3000000200130
          E - TRANSMITTED TO OTHER CENTRES                                      3000000200131
          A - IMPORTANT ALTERATIONS                                             3000000200132
          U - UNIMPORTANT ALTERATIONS                                           3000000200133
          D - ENTRY OR SUBENTRY DELETED. THIS MUST BE FOLLOWED BY               3000000200134
              FREE TEXT JUSTIFYING THE DELETION                                 3000000200135
ENDDICTION      134                                                             300000029999 0
DICTION           3     740418  INSTITUTES                                      3000000300001
ENDDICTION      745                                                             3000000399999
DICTION           4     700109  TYPE OF REFERENCE                               3000000400001
ENDDICTION        7                                                             3000000499999
DICTION           5     740418  JOURNALS                                        3000000500001
ENDDICTION      525                                                             3000000599999
DICTION           6     740418                                                  3000000600001
ENDDICTION      462                                                             3000000699999
DICTION           7     740418  BOOKS AND CONFERENCES                           3000000700001
ENDDICTION      632                                                             3000000799999
DICTION           8     730426 ELEMENTS                                         3000000800001
ENDDICTION      105                                                             3000000899999
DICTION           9     731023  COMPOUNDS                                       3000000900001
ENDDICTION       31                                                             3000000999999
DICTION          10     750209 QUANT-FIELD 1 (PROCESSES+PARAMS)                 300000100000 1C
TOT       TOTAL                                                                 3000001000002
          ------------------------------------------------------------------    3000001000003
EL        ELASTIC SCATTERING                                                    3000001000004
INL       INELASTIC SCATTERING                                                  3000001000005
THS       THERMAL SCATTERING                                                    3000001000006
SCT       TOTAL SCATTERING                                                      3000001000007
BAS       BOUND-ATOM SCATTERING                                                 3000001000008
FAS       FREE ATOM SCATTERING                                                  3000001000009
COH       COHERENT SCATTERING                                                   3000001000010
INC       INCOHERENT SCATTERING                                                 3000001000011
RAD       SCATTERING RADIUS                                                     3000001000012
CRO       (CROSS SECTION) CROSS SECTION FOR THE FORMATION OF THE                3000001000013I
           SPECIFIED PRODUCT NUCLIDE OR THE SPECIFIED REACTION-                 3000001000014I
           TYPE (X,Y).                                                          3000001000015I
TTY       (THICK-TARGET-YIELD) THICK-TARGET-YIELD FOR THE                       3000001000016I
           SPECIFIED PRODUCT NUCLIDE                                            3000001000017I
FCR       (FISSION CROSS SECTION)                                               3000001000018I
FY        (FISSION YIELD) INDEPENT, CUMULATIVE AND ISOBARIC CHAIN               3000001000019I
            YIELD SEE MODIFIER (DICT 12)                                        3000001000020I
          ------------------------------------------------------------------    3000001000021
NON       NONELASTIC                                                            3000001000022
ABS       ABSORPTION                                                            3000001000023
          ------------------------------------------------------------------    3000001000024
NG        N,GAMMA                                                               3000001000025
ING       INELASTIC GAMMA                                                       3000001000026
GEM       GAMMA-EMISSION                                                        3000001000027
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N2N         N,2N                                                          3000001000028
N3N         N,3N                                                          3000001000029
N4N         N,4N                                                          3000001000030
NEM         NEUTRON-EMISSION                                              3000001000031
NPR         NEUTRON-PRODUCTION                                            3000001000032
            ----------------------------------------------------------    3000001000033
NP          N,P                                                           3000001000034
NNP         N,NP                                                          3000001000035
N2P         N,2P                                                          3000001000036
PEM         PROTON-EMISSION                                               3000001000037
ND          N,D                                                           3000001000038
NND         N,ND                                                          3000001000039
NT          N,T                                                           3000001000040
NNT         N,NT                                                          3000001000041
N3          N,HE3                                                         3000001000042
NN3         N,NHE3                                                        3000001000043
NA          N,ALPHA                                                       3000001000044
NNA         N,NALPHA                                                      3000001000045
N2A         N,2ALPHA                                                      3000001000046
AEM         ALPHA-EMISSION                                                3000001000047
NX          CHARGED-PARTICLES EMISSION                                    3000001000048
            ----------------------------------------------------------    3000001000049
NF          N,FISSION                                                     3000001000050
ALF         ALPHA                                                         3000001000051
ETA         ETA                                                           3000001000052
NU          NU                                                            3000001000053
            ----------------------------------------------------------    3000001000054
PCS         PEAK CROSS-SECTION AT RESONANCE                               3000001000055
WID         RESONANCE-WIDTH                                               3000001000056
ARE         RESONANCE AREA                                                3000001000057
STF         STRENGTH-FUNCTION                                             3000001000058
D           AVERAGE LEVEL-SPACING                                         3000001000059
EN          ENERGY (SPECIAL USE FOR EN,RES = RESONANCE ENERGY)            3000001000060
J           SPIN J OF RESONANCES,STRENGTH-FUNCTIONS,ETC.                  3000001000061
PTY         PARITY OF RESONANCE                                           3000001000062
L           ANGULAR MOMENTUM L OF RESONANCES,STRENGTH-FUNCTIONS ETC       3000001000063
G           STATISTICAL-WEIGHT FACTOR                                     3000001000064
            ----------------------------------------------------------    3000001000065
ANU         ADLER-ADLER NU(EQUIVALENT TO HALF TOTAL WIDTH)                3000001000066
AGT         ADLER-ADLER TOTAL SYMMETRY COEFFICIENT                        3000001000067
AHT         ADLER-ADLER TOTAL ASYMMETRY COEFFICIENT                       3000001000068
AGC         ADLER-ADLER CAPTURE SYMMETRY COEFFICIENT                      3000001000069
AHC         ADLER-ADLER CAPTURE ASYMMETRY COEFFICIENT                     3000001000070
AGF         ADLER-ADLER FISSION SYMMETRY COEFFICIENT                      3000001000071
AHF         ADLER-ADLER FISSION ASYMMETRY COEFFICIENT                     3000001000072
            ----------------------------------------------------------    3000001000073
LDP         LEVEL-DENSITY PARAMETER                                       3000001000074*
TEM         NUCLEAR TEMPERATURE                                           3000001000075
SCO         SPIN-CUT-OFF FACTOR                                           3000001000076
SF          SPONTANEOUS FISSION                                           3000001000077
ENDDICTION        76                                                      300000109999990
DICTION           11      730717 QUANT-FIELD 2 (FUNCTION)                 3000001100001
ENDDICTION        22                                                      3000001199999
DICTION           12      730717 QUANT-FIELD 3 (MODIFIERS)                3000001200001
ENDDICTION        59                                                      3000001299999
DICTION           13      750209    PARTICLES                             300000130000010
G           (GAMMAS) EXCEPT DECAY GAMMAS                                  3000001300002
N           (NEUTRONS)                                                    3000001300003
P           (PROTONS)                                                     3000001300004
D           (DEUTERONS)                                                   3000001300005
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T           (TRITONS)                                                    3000001300006
HE3         (HE-3)                                                       3000001300007
A           (ALPHAS) HE-4                                                3000001300008
FF          (FISSION FRAGMENTS)                                          3000001300009
            ---------------------------------------------------------    3000001300010
            ABOVE CODES ARE USED IN THE FOURTH QUANTITY SUBFIELD         3000001300011
            AND UNDER 'PART-DET'.                                        3000001300012
            THE CODES BELOW ARE USED ONLY UNDER 'PART-DET'.              3000001300013
            ---------------------------------------------------------    3000001300014
DG          (DECAY GAMMAS) USED FOR GAMMAS EMITTED FROM METASTABLE       3000001300015
            STATES AND FOR GAMMAS FOLLOWING A PARTICLE-EMITTING          3000001300016
            DECAY (E.G. BETA DECAY)                                      3000001300017
XR          (X-RAYS)                                                     3000001300018
AR          (ANNIHILATION RADIATION)                                     3000001300019
B-          (DECAY BETA-)                                                3000001300020
B           (DECAY BETAS) UNSPECIFIED WHETHER B+ OR B-                   3000001300021
B+          (DECAY BETA+) POSITRONS                                      3000001300022
E           (ELECTRONS) OTHER THAN DECAY BETAS                           3000001300023
RCL         (RECOIL NUCLEUS)                                             3000001300024
RSD         (RESIDUAL NUCLEUS)                                           3000001300025
PN          (PROMPT NEUTRONS)                                            3000001300026
DN          (DELAYED NEUTRONS)                                           3000001300027
COMPLEX     (UNDEFINED OUTGOING PARTICLES) IF THE AUTHOR DOES NOT        3000001300028
             STATE THE KIND AND NUMBER OF THE OUTGOING PARTICLES         3000001300029
             IN CHARGED PARTICLE INDUCED REACTIONS OR IF AMBIGUITY       3000001300030
             EXISTS IN RESPECT TO THE REACTION TYPES INVOLVED            3000001300031
NONE        (NO INFORMATION AVAILABLE)                                   3000001300032
ENDDICTION          31                                                   3000001399999
DICTION             14      740418  QUANTITIES                           3000001400001
ENDDICTION         443                                                   3000001499999
DICTION             16      750209   STATUS                              3000001600010
PRELM       (PRELIMINARY DATA) DATA LABELLED BY AUTHOR AS PRELIM'RY      3000001600002
              FREE TEXT= AUTHOR'S INFORMATION ABOUT FINALIZING THE       3000001600003
                         DATA.                                           3000001600004
              ALSO TO BE USED FOR 'DATA NOT TO BE QUOTED PRIOR           3000001600005
                                  TO PUBLICATION'.                       3000001600006
SPSDD       (DATA SUPERSEDED) DATA SUPERSEDED BY AUTHOR'S REVISION,      3000001600007
              AND REVISED DATA ENTERED IN LIBRARY.                       3000001600008
              FREE TEXT= CROSS-REFERENCE TO SUPERSEDING DATA TABLE       3000001600009
DEP         (DEPENDENT DATA)                                             3000001600010
              FREE TEXT= CROSS-REFERENCE TO THE INDEPENDENT DATA         3000001600011
                         FROM WHICH DEPENDENT DATA WERE OBTAINED.        3000001600012
              EXAMPLE= GAMMA-WIDTH WHEN OBTAINED BY SUBTRACTION          3000001600013
                       FROM INDEPENDENTLY MEASURED TOTAL-WIDTHS          3000001600014
                       AND NEUTRON-WIDTHS.                               3000001600015
APRVD       (APPROVED BY AUTHOR) PROOF-COPY WAS APPROVED BY AUTHOR       3000001600016
              AND AUTHOR'S CORRECTIONS HAVE BEEN ENTERED.                3000001600017
              FREE TEXT= NAME AND DATE OF APPROVAL                       3000001600018
UNOBT       (DATA UNOBTAINABLE FROM AUTHOR)                              3000001600019
              FREE TEXT= EXPLANATION WHY UNOBTAINABLE                    3000001600020
SCSRS       (DATA CONVERTED FROM SCISRS-1) STATUS INFORMATION IS         3000001600021
              INCOMPLETE DUE TO AUTOMATIC CONVERSION FROM SCISRS-1       3000001600022
OUTDT       (NORMALIZATION OUT-OF-DATE)                                  3000001600023
              FREE TEXT= REASON OR CROSS-REFERENCE TO RENORMALIZED       3000001600024
                         DATA TABLE                                      3000001600025
RNORM       (DATA RENORMALIZED) DATA RENORMALIZED BY OTHER THAN          3000001600026
              AUTHOR.                                                    3000001600027
              FREE TEXT= EXPLANATION OF RENORMALIZATION AND CROSS-       3000001600028
                         REFERENCE TO AUTHOR'S ORIGINAL DATA.            3000001600029
              NOTE= ONLY TO BE USED FOR NON-TRIVIAL RENORMALIZATN        3000001600030
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                BY AN EVALUATOR. COMPILATION CENTRES SHOULD      3000001600031
                GENERALLY STORE THE AUTHOR'S ORIGINAL            3000001600032
                NORMALIZATION.                                   3000001600033
COMP        DATA OBTAINED FROM PUBLICATION BY THE COMPILER,      3000001600034I
            CHECKED, BUT NOT APPROVED BY THE AUTHOR              3000001600035I
CURVE       TABULAR DATA OBTAINED FROM A CURVE WITH A DATA-POINT 3000001600036I
              READER                                             3000001600037I
ENDDICTION          36                                         3000001699999C
DICTION             18      750209  FACILITY                   3000001800001C
CCW         (COCKCROFT-WALTON ACCELERATOR)                       3000001800002
LINAC       (ELECTRON LINEAR ACCELERATOR)                        3000001800003
ICTR        (INSULATED CORE TRANSFORMER ACCELERATOR)             3000001800004
VDG         (VAN DE GRAAFF)                                      3000001800005
VDGT        (TANDEM VAN DE GRAAFF)                               3000001800006
HILAC       (HEAVY ION LINEAR ACCELERATOR)                       3000001800007I
CYGFF       (CYCLOGRAAFF)                                        3000001800008
CYCLO       (CYCLOTRON)                                          3000001800009
ISOCYC      (ISOCHRONOUS-CYCLOTRON)                              3000001800010I
SYNCH       (SYNCHROTRON)                                        3000001800011
SYNCYC      (SYNCHROCYCLOTRON)                                   3000001800012I
BETAT       (BETATRON)                                           3000001800013
MI[illegible]       (MICROTRON)                                  3000001800014
DYNAM       (DYNAMITRON)                                         3000001800015
OSCIP       (PILE OSCILLATOR)                                    3000001800016
CHOPF       (FAST CHOPPER)                                       3000001800017
CHOPS       (SLOW CHOPPER)                                       3000001800018
SELVE       (VELOCITY SELECTOR)                                  3000001800019
SPECM       (MASS SPECTROMETER)                                  3000001800020
SPECD       (DOUBLE MASS SPECTROMETER)                           3000001800021
SPECC       (CRYSTAL SPECTROMETER)                               3000001800022
ENDDICTION          21                                         3000001899999C
DICTION             19      730426  NEUTRON SOURCE             3000001900001
ENDDICTION          21                                         3000001999999
DICTION             21      750209   METHOD                    3000002100001C
COINC       (COINCIDENCE)                                        3000002100002
PHD         (PULSE-HEIGHT DISCRIMINATION)                        3000002100003
DIFFR       (DIFFRACTION)                                        3000002100004
REFL        (TOTAL REFLECTION FROM MIRRORS)                      3000002100005
MAGFR       (MAGNETIC FIELD ROTATION)                            3000002100006
TOF         (TIME-OF-FLIGHT)                                     3000002100007
SL[illegible]       (SLOWING-DOWN-TIME)                          3000002100008
CADMB       (CADMIUM BATH)                                       3000002100009
MANGB       (MANGANESE BATH)                                     3000002100010
ACTIV       (ACTIVATION)                                         3000002100011
REAC        (REACTIVITY MEASUREMENT)                             3000002100012
BURN        (BURN-UP)                                            3000002100013
ASSOP       (ASSOCIATED PARTICLE)                                3000002100014
PLSED       (PULSE DIE-AWAY)                                     3000002100015
REC         (CROSS SECTIONS OR YIELDS DETERMINED BY THE COLLECTION 3000002100016I
            OF RECOILS)                                          3000002100017I
DIDI        (RANGE OF RECOILS MEASURED WITH THICK-TARGET-THICK-  3000002100018I
            CATCHER-ARRANGEMENT)                                 3000002100019I
DIDU        (RANGE OF RECOILS MEASURED WITH THICK-TARGET-THINN-  3000002100020I
            CATCHER-ARRANGEMENT)                                 3000002100021I
DUDI        (RANGE OF RECOILS MEASURED WITH THINN-TARGET-THICK-  3000002100022I
            CATCHER-ARRANGEMENT)                                 3000002100023I
DUDU        (RANGE OF RECOILS MEASURED WITH THINN-TARGET-THINN-  3000002100024I
            CATCHER-ARRANGEMENT)                                 3000002100025I
HEJET       (COLLECTION BY HE-JET)                               3000002100026I
CHSEP       (CHEMICAL SEPARATION)                                3000002100027I
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ASEP        (SEPARATION BY MASS SEPARATOR)                                  3000002100028I
SITA        (SINGLE TARGET IRRADIATIONS)                                    3000002100029I
STTA        (STACKED TARGET IRRADIATIONS)                                   3000002100030I
INTB        (IRRADIATIONS WITH INTERNAL BEAM)                               3000002100031I
EXTB        (IRRADIATIONS WITH EXTERNAL BEAM)                               3000002100032I
EDEG        (ENERGY-DEGRADATION BY FOILS) ENERGY-DEGRADATION OF THE         3000002100033I
             BEAM BEFORE HITTING THE TARGET ARRANGEMENT                     3000002100034I
MONSEP      (SEPARATE MONITORFOIL)                                          3000002100035I
MONMIX      (MIXED MONITOR) MONITOR AND TARGET COMBINED AS CHEMICAL         3000002100036I
             COMPOUND OR MIXTURE OR MONITOR REACTION HAS THE SAME           3000002100037I
             TARGET NUCLIDE AS THE REACTION GIVEN UNDER 'REACTION'.         3000002100038I
BCINT       (BEAM CURRENT INTEGRATED) CODEWORD USED ONLY IF VALUES          3000002100039I
             GIVEN IN THE DATA SECTION ARE BASED ON THIS                    3000002100040I
             MEASUREMENT                                                    3000002100041I
ENDDICTION          40                                                      3000002199999C
DICTION             22      750209   DETECTORS                              3000002200001C
GEMUC       (GEIGER MUELLER COUNTER)                                        3000002200002I
GLASD       (GLASS DETECTOR)                                                3000002200003
TRD         (TRACK DETECTOR) ALL WHICH ARE NOT GLASS                        3000002200004
SOLST       (SOLID-STATE DETECTOR)                                          3000002200005
SID         (SI-SOLID-STATE DETECTOR)                                       3000002200006I
GELI        (GERMANIUM-LITHIUM DETECTOR)                                    3000002200007
THRES       (THRESHOLD DETECTOR)                                            3000002200008
MOXR        (MOXON-RAE DETECTOR)                                            3000002200009
HORBU       (HORNYAK BUTTON DETECTOR)                                       3000002200010
SCIN        (SCINTILLATION DETECTOR)                                        3000002200011
*COMMENT 'SCIN' SHOULD BE USED FOR SOLID SCINTILLATION COUNTER,             3000002200012I
*         LIKE NAJ, ONLY.                                                   3000002200013I
LISCIN      (LIQUID SCINILLATION COUNTER)                                   3000002200014I
STANK       (SCINTILLATOR TANK)                                             3000002200015
MTANK       (MODERATING TANK DETECTOR)                                      3000002200016
CSICR       (CESIUM-IODIDE CRYSTAL)                                         3000002200017
NAICR       (SODIUM-IODIDE CRYSTAL)                                         3000002200018
LONGC       (LONG COUNTER)                                                  3000002200019
PROPC       (PROPORTIONAL COUNTER)                                          3000002200020
TELES       (COUNTER TELESCOPE)                                             3000002200021
FISCH       (FISSION CHAMBER)                                               3000002200022
BPAIR       (ELECTRON-PAIR SPECTROMETER)  FOR GAMMAS                        3000002200023
ARCOI       (ANNIHILATION RADIATION COINCIDENCE COUNTER)                    3000002200024I
ENDDICTION          23                                                      3000002299999C
DICTION             23      750209    ANALYSIS                              3000002300001C
AREA        (AREA ANALYSIS)                                                 3000002300002
GAREA       (PHOTOPEAK-AREA ANALYSIS)                                       3000002300003I
SHAPE       (SHAPE ANALYSIS)                                                3000002300004
4PIIA       (4PI TIMES DIFFERENTIAL CROSS-SECTION AT ONE ANGLE)             3000002300005
SLA         (SINGLE LEVEL ANALYSIS)                                         3000002300006
MLA         (MULTILEVEL ANALYSIS)                                           3000002300007
INTANG      (INTEGRATION OF ANGULAR DISTRIBUTION)                           3000002300008I
ENDDICTION           7                                                      3000002399999C
DICTION             24      750209 DATA-HEADING KEYWORDS                    3000002400001C
*COMMENT  THE MEANING OF THE CODE 'EN' SHOULD BE EXTENDED TO               3000002400002I
*         'ENERGY OF INCIDENT PROJECTILE, LAB-SYSTEM'. THIS                3000002400003I
*         EXTENSION SHOULD ALSO APPLY TO THE OTHER CODEWORDS,              3000002400004I
*         WHICH CONTAIN 'EN', LIKE 'EN-CM'.                                3000002400005I
EN           INCIDENT NEUTRON ENERGY, LAB-SYSTEM                           *3000002400006
EN-CM        INCIDENT NEUTRON ENERGY, C-M-SYSTEM                           *3000002400007
EN-MIN       LOW LIMIT OF INCIDENT N-ENERGY RANGE, LAB-SYSTEM              *3000002400008
EN-CM-MIN    LOW LIMIT OF INCIDENT N-ENERGY RANGE, C-M-SYSTEM              *3000002400009
EN-MAX       HIGH LIMIT OF INCIDENT N-ENERGY RANGE, LAB-SYSTEM             *3000002400010
EN-CM-MAX    HIGH LIMIT OF INCIDENT N-ENERGY RANGE, C-M-SYSTEM             *3000002400011
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EN-DUMMY	DUMMY ENERGY. USED AS THE NUMERICAL EQUIVALENT	*3000002400012
	OF AN INCIDENT NEUTRON SPECTRUM WHERE NO NUMERICAL	3000002400013
	ENERGY VALUE IS GIVEN BY THE AUTHOR	3000002400014
EN-RSL	INCIDENT-NEUTRON ENERGY-RESOLUTION	3000002400015
+EN-RSL	+UNSYMMETRIC ENERGY RESOLUTION	3000002400016
-EN-RSL	-UNSYMMETRIC ENERGY RESOLUTION	3000002400017
EN-ERR	ERROR OF MONOCHROMATIC INCIDENT-NEUTRON ENERGY OR	3000002400018
	UNCERTAINTY OF THE CENTRAL ENERGY IN AN INCIDENT	3000002400019
	NEUTRON-SPECTRUM.	3000002400020
EN-ERR1	ENERGY ERROR, IF MORE THAN ONE ERROR IS GIVEN.	3000002400021
	EXPLANATION UNDER 'ERR-ANALYS'.	3000002400022
EN-ERR2	SECOND ENERGY ERROR, IF MORE THAN ONE ERROR IS GIVEN.	3000002400023
	EXPLANATION UNDER 'ERR-ANALYS'	3000002400024
+EN-ERR	+ UNSYMMETRIC ENERGY-ERROR	3000002400025
-EN-ERR	- UNSYMMETRIC ENERGY-ERROR	3000002400026
EN-NRM	NORMALIZATION ENERGY. TO BE USED WHEN A DATA SET IS	3000002400027
	NORMALIZED TO ONE ENERGY ONLY.	3000002400028
EN-RES	RESONANCE ENERGY	*3000002400029
EN-RES-ERR	ERROR OF RESONANCE-ENERGY	3000002400030
MU-ADLER	MU IN ADLER-ADLER RESONANCE-ANALYSIS, EQUIVALENT TO	*3000002400031
	RESONANCE ENERGY	3000002400032
E	ENERGY OF OUTGOING PARTICLE, LAB-SYSTEM	*3000002400033
E-CM	ENERGY OF OUTGOING PARTICLE, C-M-SYSTEM	*3000002400034
E-MIN	LOW LIMIT OF OUTGOING-PARTICLE E-RANGE, LAB-SYSTEM	*3000002400035
E-CM-MIN	LOW LIMIT OF OUTGOING-PARTICLE E-RANGE, C-M-SYSTEM	*3000002400036
E-MAX	HIGH LIMIT OF OUTGOING-PARTICLE E-RANGE, LAB-SYSTEM	*3000002400037
E-CM-MAX	HIGH LIMIT OF OUTGOING-PARTICLE E-RANGE, C-M-SYSTEM	*3000002400038
E-RSL	OUTGOING-PARTICLE ENERGY-RESOLUTION	3000002400039
E-ERR	OUTGOING-PARTICLE ENERGY-ERROR	3000002400040
E-EXC	EXCITATION-ENERGY	3000002400041
E-EXC-MIN	LOW LIMIT OF EXCITATION-ENERGY	3000002400042
E-EXC-MAX	HIGH LIMIT OF EXCITATION-ENERGY	3000002400043
E-LVL	LEVEL-ENERGY	3000002400044
E-LVL-INI	INITIAL LEVEL OF GAMMA-TRANSITION	3000002400045
E-LVL-FIN	FINAL LEVEL OF GAMMA-TRANSITION	3000002400046
E-LVL-ERR	LEVEL-ENERGY ERROR	3000002400047
E-LVL-MIN	LOW ENERGY-LIMIT OF A DISCRETE LEVEL-GROUP	3000002400048
E-LVL-MAX	HIGH ENERGY-LIMIT OF A DISCRETE LEVEL-GROUP	3000002400049
Q-VAL	Q-VALUE	3000002400050
Q-VAL-ERR	Q-VALUE ERROR	3000002400051
Q-VAL-MIN	LOWER LIMIT OF Q-VALUE	3000002400052
Q-VAL-MAX	UPPER LIMIT OF Q-VALUE	3000002400053
E-GAIN	GAIN IN NEUTRON ENERGY	3000002400054
E-GAIN-ERR	ERROR OF GAIN IN NEUTRON ENERGY	3000002400055
E-DGD	DEGREDATION IN NEUTRON ENERGY	3000002400056
E-DGD-ERR	ERROR OF DEGREDATION IN NEUTRON ENERGY	3000002400057
ANG	ANGLE, LAB-SYSTEM	*3000002400058
ANG1	ANGLE, DEFINITION SPECIFIED IN THE BIB-SECTION	*3000002400059
ANG2	ANGLE, DEFINITION SPECIFIED IN THE BIB-SECTION	*3000002400060
ANG3	ANGLE, DEFINITION SPECIFIED IN THE BIB-SECTION	*3000002400061
ANG-CM	ANGLE, C-M-SYSTEM	*3000002400062
ANG-MIN	LOW LIMIT OF ANGLE RANGE, LAB-SYSTEM	*3000002400063
ANG-CM-MIN	LOW LIMIT OF ANGLE RANGE, C-M-SYSTEM	*3000002400064
ANG-MAX	HIGH LIMIT OF ANGLE RANGE, LAB-SYSTEM	*3000002400065
ANG-CM-MAX	HIGH LIMIT OF ANGLE RANGE, C-M-SYSTEM	*3000002400066
ANG-RSL	ANGULAR RESOLUTION	3000002400067
ANG-ERR	ANGLE-ERROR	3000002400068
COS	COSINE OF ANGLE, LAB-SYSTEM	*3000002400069
COS-CM	COSINE OF ANGLE, C-M-SYSTEM	*3000002400070
COS-MIN	LOW LIMIT OF COSINE-RANGE OF ANGLE, LAB-SYSTEM	*3000002400071

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COS-CM-MIN  LOW LIMIT OF COSINE-RANGE OF ANGLE, C-M-SYSTEM                *3000002400072
COS-MAX     HIGH LIMIT OF COSINE-RANGE OF ANGLE, LAB-SYSTEM               *3000002400073
COS-CM-MAX  HIGH LIMIT OF COSINE-RANGE OF ANGLE, C-M-SYSTEM               *3000002400074
COS-RSL     COSINE OF ANGULAR RESOLUTION                                   3000002400075
COS-ERR     COSINE OF ANGLE-ERROR                                          3000002400076
DATA        HEADING FOR COLUMN GIVING THE QUANTITY SPECIFIED               3000002400077
              UNDER 'ISO-QUANT'                                            3000002400078
DATA-CM     DATA GIVEN IN THE CENTRE OF MASS SYSTEM                        3000002400079
DATA-APRX   APPROXIMATE VALUE OF DATUM                                     3000002400080
DATA-MIN    LOW LIMIT OF DATUM                                             3000002400081
DATA-MAX    HIGH LIMIT OF DATUM                                            3000002400082
DATA-ERR    DATA-ERROR. EXPLANATION TO BE GIVEN UNDER 'ERR-ANALYS'         3000002400083
DATA-ERR1   FIRST DATA-ERROR, IF MORE THAN ONE ERROR-COL IS GIVEN.         3000002400084
              EXPLANATION UNDER 'ERR-ANALYS'                               3000002400085
DATA-ERR2   SECOND DATA-ERROR,IF MORE THAN ONE ERROR-COL IS GIVEN.         3000002400086
              EXPLANATION UNDER 'ERR-ANALYS'                               3000002400087
+DATA-ERR   + UNSYMMETRIC DATA-ERROR. EXPLANATN UNDER 'ERR-ANALYS'         3000002400088
DATA-ERR3   THIRD DATA-ERROR, IF MORE THAN ONE ERROR-COL IS GIVEN.         3000002400089
              EXPLANATION UNDER 'ERR-ANALYS'                               3000002400090
-DATA-ERR   - UNSYMMETRIC DATA-ERROR. EXPLANATN UNDER 'ERR-ANALYS'         3000002400091
RATIO       HEADING FOR COLUMN GIVING THE RATIO SPECIFIED UNDER            3000002400092
              'ISO-QUANT', OR THE QUANTITY/STANDARD RATIO                  3000002400093
RATIO-MIN   LOW LIMIT OF RATIO                                             3000002400094
RATIO-MAX   HIGH LIMIT OF RATIO                                            3000002400095
RATIO-ERR   RATIO-ERROR                                                    3000002400096
RATIO-ERR1  FIRST RATIO-ERROR, IF MORE THAN ONE RATIO-ERROR IS             3000002400097
              GIVEN. EXPLANATION UNDER 'ERR-ANALYS'                        3000002400098
RATIO-ERR2  SECOND RATIO-ERROR, IF MORE THAN ONE RATIO-ERROR IS            3000002400099
              GIVEN. EXPLANATION UNDER 'ERR-ANALYS'                        3000002400100
+RATIO-ERR  +UNSYMMETRIC RATIO-ERROR. EXPLANATN UNDER 'ERR-ANALYS'         3000002400101
-RATIO-ERR  -UNSYMMETRIC RATIO-ERROR. EXPLANATN UNDER 'ERR-ANALYS'         3000002400102
STAND       HEADING FOR COLUMN GIVING THE NUMERICAL VALUE ASSUMED          3000002400103
              FOR THE ISO-QUANT SPECIFIED UNDER 'STANDARD'                 3000002400104
STAND-ERR   STANDARD-ERROR                                                 3000002400105
STAND1      FIRST STANDARD-VALUE IF MORE THAN ONE IS GIVEN.                3000002400106
              EXPLANATION UNDER 'STANDARD'                                 3000002400107
STAND2      SECOND STANDARD-VALUE IF MORE THAN ONE IS GIVEN.               3000002400108
              EXPLANATION UNDER 'STANDARD'                                 3000002400109
STAND1-ERR  ERROR OF FIRST STANDARD-VALUE                                  3000002400110
STAND2-ERR  ERROR OF SECOND STANDARD-VALUE                                 3000002400111
TEMP        SAMPLE TEMPERATURE                                             3000002400112
TEMP-ERR    ERROR OF SAMPLE TEMPERATURE                                    3000002400113
ELEMENT     Z-NUMBER OF ELEMENTS, FOR FISSION-PRODUCT YIELDS ONLY         *3000002400114
MASS        A-NUMBER OF ISOTOPES, FOR FISSION-PRODUCT YIELDS ONLY         *3000002400115
HL          HALF-LIFE OF RESIDUAL NUCLEUS                                  3000002400116
HL1         HALF-LIFE OF NUCLEUS SPECIFIED IN THE BIB-SECTION              3000002400117
HL2         HALF-LIFE OF NUCLEUS SPECIFIED IN THE BIB-SECTION              3000002400118
HL3         HALF-LIFE OF NUCLEUS SPECIFIED IN THE BIB-SECTION              3000002400119
HL-ERR      ERROR OF HALF-LIFE OF RESIDUAL NUCLEUS                         3000002400120
HL1-ERR     ERROR OF HALF-LIFE OF NUCLEUS SPECIFIED IN BIB-SECTION         3000002400121
HL2-ERR     ERROR OF HALF-LIFE OF NUCLEUS SPECIFIED IN BIB-SECTION         3000002400122
HL3-ERR     ERROR OF HALF-LIFE OF NUCLEUS SPECIFIED IN BIB-SECTION         3000002400123
FLAG        FLAG. MEANING OF FLAGS GIVEN UNDER THIS HEADING TO BE          3000002400124
              EXPLAINED IN BIB-SECTION UNDER 'FLAG'                        3000002400125
NUMBER      NUMBER. USED TO SPECIFY INDICES, E.G.COEFF-NUMBERS,           *3000002400126
                                  LEVEL-NUMBERS ETC.                       3000002400127
NUMBER-CM   COEFFICIENT-NUMBER OF LEGENDRE OR COSINE COEFFICIENTS         *3000002400128
            WHEN THE FIT HAS BEEN DEDUCED FROM AN ANGULAR                  3000002400129
            DISTRIBUTION IN WHICH THE ENERGIES ARE GIVEN IN THE            3000002400130
            CENTRE OF MASS SYSTEM                                          3000002400131
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SPIN J      SPIN J OF RESONANCES, STRENGTH-FUNCTIONS, ETC.                  3000002400132
MOMENTUM L  ANGULAR MOMENTUM L OF RESONANCES, STRENGTH-F'S, ETC.            3000002400133
PARITY      PARITY OF RESONANCE                                             3000002400134
STAT-W G    STATISTICAL-WEIGHT FACTOR G                                     3000002400135
MISC        HEADING FOR A COLUMN WITH SUPPLEMENTARY INFORMATION             3000002400136
            FOR WHICH NO DATA-HEADING KEYWORD HAS BEEN DEFINED.             3000002400137
            EXPLANATION TO BE GIVEN UNDER 'MISC-COL' KEYWORD                3000002400138
MISC1       FIRST MISCELLANEOUS COLUMN - IF MORE THAN ONE IS GIVEN          3000002400139
               SAME USAGE AS -MISC-(SEE ABOVE)                              3000002400140
MISC2       SECOND MISCELLANEOUS COLUMN -IF MORE THAN ONE IS GIVEN          3000002400141
               SAME USAGE AS -MISC-(SEE ABOVE)                              3000002400142
MISC3       THIRD MISCELLANEOUS COLUMN -IF MORE THAN ONE IS GIVEN           3000002400143I
               SAME USAGE AS -MISC-(SEE ABOVE)                              3000002400144I
MISC4       FOURTH MISCELLANEOUS COLUMN -IF MORE THAN ONE IS GIVEN          3000002400145I
               SAME USAGE AS -MISC-(SEE ABOVE)                              3000002400146I
            ------------------------------------------------------------    3000002400147
            NOTE= * IN COL.66 IDENTIFIES THOSE KEYWORDS WHICH MAY           3000002400148
                  BE USED ONLY FOR INDEPENDENT VARIABLES.                   3000002400149
ENDDICTION      148                                                         3000002499999C
DICTION          25      730122      DATA UNIT KEYWORDS                     3000002500001
ENDDICTION       98                                                         3000002599999
 EC
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