Center of Nuclear-Physics Data (CNPD) RFNC-VNIIEF.

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Compilation.

We continue correction and translation to the EXFOR format of our experimental data and compiling new experimental data.

116 new EXFOR works have been compiled. All old entries (453 entries with "A" identifier and 297 entries with "F") have been corrected according to new requirements.

Experimental data compilation and checking have been made using the VMS operating system with the help of NNDC software.

Collaboration.

We worked in collaboration with the NNDC and CDFE during a month and half. Charged particle data from the "Journal of Physics G", "The Astrophysical Journal", "Canadian Journal of Physics" have been scanned (1980 - 1999) and 20 entries have been compiled. These data have been compiled with the new identifier - "T", which means the collaborated compilation performed by three centers: NNDC, CDFE and CNPD. After this fruitful work we decided to continue our collaboration in experimental data compilation. This collaboration includes American data compilation only.

We start neutron data compilation in collaboration with CJD. We transmitted 3 entries, which were fulfilled at VNIIEF to CJD. We plan to compile 20 entries according to ISTC project #731 "Benchmark data on gamma-ray production for fusion applications"

Software.

We are developing the software to support international evaluated data bases using the Windows NT operating system.

We have finished developing the software to support the adopted data base. It will the permit potential user not only to scan base containing but to perform works oriented to reevaluation the old value of cross section with consideration of new received experimental information.

An electron version of the evaluated and experimental data on charged particles was prepared for thermonuclear applications (SaBa) on the base of the handbook "Nuclear Physics Constant for Thermonuclear Fusion" //INDC(CCP)-326/L+F, VIENNA, 1991, taking into account new experimental data, revealed errors and misprints.

The objective was to develop an electron version convenient for application while preparing materials for scientific reports (articles), obtaining express-information about the current status of evaluated and experimental data on cross-sections on charged particles for light nuclei.

For a qualified user of the library there is a capability to obtain his "own" adopted curve. This curve can be obtained using included to this library graphic interface. For this purpose the library comes with programs allowing to input new experimental data, and modify the existing ones.

The available "help" allows to master this library.

Evaluation activity.

The evaluation activity was stimulated by participation of the CNPD staff in some international projects.

In the frame of work on ISTC #731 project we prepared adopted data for neutron-gamma-production cross-sections on Al, Pb, Fe, ^{6,7}Li, ^{10}B.

According to ISTC #145 project we prepared adopted data for 120 reactions and included them into SaBa.

List of the reactions included in SaBa.

N	Reaction	Type	N	Reaction	Type	N	Reaction	Type
1.	^{2}H (d,g)^{4}He	SIG	41.	^{6}Li(t,x)	SIG	81.	^{9}Be(p,n)^{9}B	SIG
2.	^{2}H(d,n)^{3}He	DA, SIG	42.	^{7}Li(a,n)^{10}B	SIG	82.	^{9}Be(p,x)	SIG
3.	^{2}H(d,n+p)^{2}H	SIG	43.	^{7}Li(d,p)^{8}Li	SIG	83.	^{10}B(d,a)^{8}Be	SIG
4.	^{2}H(d,p)^{3}H	DA, SIG	44.	^{7}Li(d,t)^{6}Li	SIG	84.	^{10}B(d,a)^{8}Be*(2.94)	SIG
5.	^{2}H(p,g)^{3}He	SIG	45.	^{7}Li(d,t)^{6}Li*(0.0)	SIG	85.	^{10}B(d,n)^{11}C	SIG
6.	^{2}H(p,n+p)^{1}H	SIG	46.	^{7}Li(d,x)	SIG	86.	^{10}B(d,n)^{11}C *(5.8)	SIG
7.	^{3}H(d,g)^{5}He	SIG	47.	^{7}Li(^{3}He,a)^{6}Li	SIG	87.	^{10}B(d,p)^{11}B	SIG
8.	^{3}H(d,n)^{4}He	DA, SIG	48.	^{7}Li(^{3}He,a)^{6}Li*(0.0)	SIG	88.	^{10}B(d,p)^{11}B *(2.125)	SIG
9.	^{3}H(d,x)	SIG	49.	^{7}Li(^{3}He,a)^{6}Li*(2.184)	SIG	89.	^{10}B(d,p)^{11}B *(4.445)	SIG
10.	^{3}H(^{3}He,g)^{6}Li	SIG	50.	^{7}Li(^{3}He,a)^{6}Li*(3.56)	SIG	90.	^{10}B(d,p)^{11}B *(5.021)	SIG
11.	^{3}H(^{3}He,x)	SIG	51.	^{7}Li(^{3}He,d)^{8}Be	SIG	91.	^{10}B(d,p)^{11}B *(6.743)	SIG
12.	^{3}H(p,g)^{4}He	SIG	52.	^{7}Li(^{3}He,p)^{9}Be	SIG	92.	^{10}B(p,a)^{7}Be	SIG
13.	^{3}H(p,n)^{3}He	DA, SIG	53.	^{7}Li(^{3}He,t)^{7}Be	SIG	93	^{10}B(p,a)^{7}Be*(0.43)	SIG
14.	^{3}H(t,2n)^{4}He	SIG	54.	^{7}Li(p,a)^{4}He	DA, SIG	94.	^{10}B(p,g)^{11}C	SIG
15.	^{3}He(d,g)^{5}Li	SIG	55.	^{7}Li(p,g) ^{8}Be	SIG	95.	^{11}B(a,g)^{15}N	SIG
16.	^{3}He(d,n+p)^{3}He	SIG	56.	^{7}Li(t,a)^{6}He	SIG	96.	^{11}B(a,p)^{14}C	SIG
17.	^{3}He(d,p)^{4}He	DA, SIG	57.	^{7}Li(t,a)^{6}He *(1.81)	SIG	97.	^{11}B(d,a)^{9}Be	SIG
18.	^{3}He(^{3}He,2p)^{4}He	SIG	58.	^{7}Li(t,d)^{8}Li	SIG	98.	^{11}B(d,g)^{13}C	SIG
19.	^{3}He(^{3}He,g)^{6}Be	SIG	59.	^{7}Li(t,p)^{9}Li	SIG	99.	^{11}B(d,n)^{12}C	SIG
20.	^{3}He(t,d)^{4}He	SIG	60.	^{7}Li(t,x)	SIG	100.	^{11}B(d,p)^{12}B	SIG
21.	^{4}He(d,g)^{6}Li	SIG	61.	^{9}Be(d,a)^{7}Li	SIG	101.	^{11}B(p,a) ^{8}Be	SIG
22.	^{4}He(^{3}He,g)^{7}Be	SIG	62.	^{9}Be(d,a)^{7}Li*(0.478)	SIG	102.	^{11}B(p,g)^{12}C	SIG
23.	^{4}He(t,g)^{7}Li	SIG	63.	^{9}Be(d,g)^{11}B	SIG	103.	^{11}B(p,n)^{11}C	SIG
24.	^{6}Li(d,a)^{4}He	DA, SIG	64.	^{9}Be(d,n)^{10}B	SIG	104.	^{12}C(p,g)^{13}N	SIG
25.	^{6}Li(d,n)^{7}Be	SIG	65.	^{9}Be(d,n)^{10}B*(0.72)	SIG	105.	^{13}C(p,g)^{14}N	SIG
26.	^{6}Li(d,p)^{7}Li	DA, SIG	66.	^{9}Be(d,n)^{10}B*(1.74)	SIG	106.	^{13}C(p,g)^{14}N*(2.31)	SIG
27.	^{6}Li(d,p)^{7}Li*(0.48)	SIG	67.	^{9}Be(d,n)^{10}B*(2.15)	SIG	107.	^{13}C(p,g)^{14}N*(3.95)	SIG
28.	^{6}Li(d,p+ t)^{4}He	SIG	68.	^{9}Be(d,n)^{10}B*(3.59)	SIG	108.	^{13}C(p,g)^{14}N*(4.92)	SIG
29.	^{6}Li(^{3}He,d) ^{7}Be	SIG	69.	^{9}Be(d,p)^{10}Be	SIG	109.	^{13}C(p,g)^{14}N*(5.11)	SIG
30.	^{6}Li(^{3}He,N)^{8}B	SIG	70.	^{9}Be(d,p)^{10}Be*(3.368)	SIG	110.	^{13}C(p,g)^{14}N*(5.69)	SIG
31.	^{6}Li(^{3}He,p)^{8}Be	SIG	71.	^{9}Be(d,t)^{8}Be	SIG	111.	^{14}N(p,g)^{15}O	SIG
32.	^{6}Li(^{3}He,p)^{8}Be*(3.04)	SIG	72.	^{9}Be(d,x)n	SIG	112.	^{14}N(p,g)^{15}O*(5.18)	SIG
33.	^{6}Li(p,a)^{3}He	DA, SIG	73.	^{9}Be(d,x)^{3}H	SIG	113.	^{14}N(p,g)^{15}O*(5.24)	SIG
34.	^{6}Li(p,g)^{7}Be	SIG	74.	^{9}Be(d,x)^{10}Be	SIG	114.	^{14}N(p,g)^{15}O*(6.18)	SIG
35.	^{6}Li(p,x)	SIG	75.	^{9}Be(^{3}He,p)^{11}B	SIG	115.	^{14}N(p,g)^{15}O*(6.79)	SIG
36.	^{6}Li(t,d)^{7}Li	SIG	76.	^{9}Be(^{3}He,p)^{11}B *(2.138)	SIG	116.	^{14}N(p,g)^{15}O*(6.86)	SIG
37.	^{6}Li(t,d)^{7}Li*(0.478)	SIG	77.	^{9}Be(^{3}He,x)	SIG	117.	^{14}N(p,g)^{15}O*(7.28)	SIG
38.	^{6}Li(t,2n)^{7}Be	SIG	78.	^{9}Be(p,a)^{6}Li	DA, SIG	118.	^{14}N(p,g)^{15}O*(7.56)	SIG
39.	^{6}Li(t,2n)^{7}Be*(0.43)	SIG	79.	^{9}Be(p,d)4-BE-8	SIG	119.	^{16}O(p,g)^{17}F	SIG
40.	^{6}Li(t,p)^{8}Li	SIG	80.	^{9}Be(p,g)^{10}B	SIG	120.	^{17}O(p,g)^{18}F	SIG

List of reactions in SaBa, date 07-Jun-99
Empty line(s) mean that the databse contain also data for
partial channel(s) of reaction shown above.

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Number   Reaction                       Type      Q MeV
    1.   1-H-2(D,G)2-HE-4               SIG       23.85
    2.   1-H-2(D,N)2-HE-3              DA, SIG  3.269
    3.   1-H-2(D,N+P)1-H-2             SIG      -2.225
    4.   1-H-2(D,P)1-H-3              DA, SIG  4.033
    5.   1-H-2(P,G)2-HE-3             SIG       5.494
    6.   1-H-2(P,N+P)1-H-1            SIG      -2.225
    7.   1-H-3(D,G)2-HE-5             SIG       16.7
    8.   1-H-3(D,N)2-HE-4            DA, SIG  17.59
    9.   1-H-3(D,X)                   SIG
   10.   1-H-3(HE-3,G)3-LI-6          SIG       15.8
   11.   1-H-3(HE-3,X)                SIG
   12.   1-H-3(P,G)2-HE-4             SIG       19.81
   13.   1-H-3(P,N)2-HE-3            DA, SIG  -0.7637
   14.   1-H-3(T,2N)2-HE-4            SIG       11.33
   15.   2-HE-3(D,G)3-LI-5            SIG       16.39
   16.   2-HE-3(D,N+P)2-HE-3          SIG      -2.225
   17.   2-HE-3(D,P)2-HE-4           DA, SIG  18.35
   18.   2-HE-3(HE-3,2P)2-HE-4        SIG       12.86
   19.   2-HE-3(HE-3,G)4-BE-6         SIG       11.49
   20.   2-HE-3(T,D)2-HE-4            SIG       14.32
   21.   2-HE-4(D,G)3-LI-6            SIG       1.475
   22.   2-HE-4(HE-3,G)4-BE-7         SIG       1.588
   23.   2-HE-4(T,G)3-LI-7            SIG       2.468
   24.   3-LI-6(D,A)2-HE-4           DA, SIG  22.37
   25.   3-LI-6(D,N)4-BE-7            SIG       3.381
   26.   3-LI-6(D,P)3-LI-7           DA, SIG  5.026
   27.
   28.   3-LI-6(D,P+T)2-HE-4          SIG       2.558
   29.   3-LI-6(HE-3,D)4-BE-7         SIG       0.1124
   30.   3-LI-6(HE-3,N)5-B-8          SIG      -1.975
   31.   3-LI-6(HE-3,P)4-BE-8         SIG       16.79
   32.
   33.   3-LI-6(P,A)2-HE-3           DA, SIG  4.018
   34.   3-LI-6(P,G)4-BE-7            SIG       5.606
   35.   3-LI-6(P,X)                  SIG
   36.   3-LI-6(T,D)3-LI-7            SIG       0.9928
   37.
   38.   3-LI-6(T,2N)4-BE-7           SIG      -2.876
   39.
   40.   3-LI-6(T,P)3-LI-8            SIG       0.801
   41.   3-LI-6(T,X)                  SIG
   42.   3-LI-7(A,N)5-B-10            SIG      -2.79
   43.   3-LI-7(D,P)3-LI-8            SIG      -0.1918
   44.   3-LI-7(D,T)3-LI-6            SIG      -0.9928
   45.
   46.   3-LI-7(D,X)                  SIG
   47.   3-LI-7(HE-3,A)3-LI-6         SIG       13.33
   48.
   49.
   50.
   51.   3-LI-7(HE-3,D)4-BE-8         SIG       11.76
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 52.  3-LI-7(HE-3,P)4-BE-9        SIG      11.2
 53.  3-LI-7(HE-3,T)4-BE-7        SIG      -0.8805
 54.  3-LI-7(P,A)2-HE-4           DA, SIG  17.35
 55.  3-LI-7(P,G)4-BE-8           SIG      17.25
 56.  3-LI-7(T,A)2-HE-6           SIG      9.84
 57.
 58.  3-LI-7(T,D)3-LI-8           SIG      -4.224
 59.  3-LI-7(T,P)3-LI-9           SIG      -2.386
 60.  3-LI-7(T,X)                 SIG
 61.  4-BE-9(D,A)3-LI-7           SIG      7.152
 62.
 63.  4-BE-9(D,G)5-B-11           SIG      15.82
 64.  4-BE-9(D,N)5-B-10           SIG      4.361
 65.
 66.
 67.
 68.
 69.  4-BE-9(D,P)4-BE-10          SIG      4.587
 70.
 71.  4-BE-9(D,T)4-BE-8           SIG      4.592
 72.  4-BE-9(D,X)                 SIG
 73.
 74.
 75.  4-BE-9(HE-3,P)5-B-11        SIG      10.32
 76.
 77.  4-BE-9(HE-3,X)              SIG
 78.  4-BE-9(P,A)3-LI-6           DA, SIG  2.126
 79.  4-BE-9(P,D)4-BE-8           SIG      0.5591
 80.  4-BE-9(P,G)5-B-10           SIG      6.586
 81.  4-BE-9(P,N)5-B-9            SIG      -1.85
 82.  4-BE-9(P,X)                 SIG
 83.  5-B-10(D,A)4-BE-8           SIG      17.82
 84.
 85.  5-B-10(D,N)6-C-11           SIG      6.465
 86.
 87.  5-B-10(D,P)5-B-11           SIG      9.23
 88.
 89.
 90.
 91.
 92.  5-B-10(P,A)4-BE-7           SIG      1.146
 93.
 94.  5-B-10(P,G)6-C-11           SIG      8.69
 95.  5-B-11(A,G)7-N-15           SIG      10.99
 96.  5-B-11(A,P)6-C-14           SIG      0.7839
 97.  5-B-11(D,A)4-BE-9           SIG      8.031
 98.  5-B-11(D,G)6-C-13           SIG      18.68
 99.  5-B-11(D,N)6-C-12           SIG      13.73
100.  5-B-11(D,P)5-B-12           SIG      1.145
101.  5-B-11(P,A)4-BE-8           SIG      8.59
102.  5-B-11(P,G)6-C-12           SIG      15.96
103.  5-B-11(P,N)6-C-11           SIG      -2.764
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