Japan Charged-Particle Nuclear Reaction Data Group (JCPRG)

Progress Report to the NRDC Meeting
May 28-30, 2001

The Executive Committee of JCPRG

General

In 2000, we have carried out the following businesses:

1. Compiling the CPND(Charged Particle Nuclear Reaction Data) (15 papers) produced in Japan with the NRDF(Nuclear Reaction Data File) format.
2. Translating the NRDF data into the EXFOR data. (Revised 30 papers, New 8 papers)
3. Making retrieval systems using internet and the InteligentPad for the CPND in both of NRDF and EXFOR,
4. Distributing the CPND and promoting utilization in Japan.
5. Making a new system to transform from NRDF to EXFOR based on the InteligentPad.

In 2000 much of our effort was concentrated on the second and fifth subjects mentioned above. We also completed a preliminary version of a new electric editor system for compiling and inputting the NRDF data.

NRDF Data Compiling Activity

In 2000 we newly compiled 15 entries (95 tables, 0.30 MB) based on the data obtained with the accelerators in Japan.

List of Data-entries Installed into NRDF in 2000

1. D1720
   Title: LIFETIME MEASUREMENT OF THE FIRST EXCITED STATE OF ^{64}GA
   First Author: M. TANIGAKI
   Journal: Eur. Phys. J. A 6 p119 1999

2. D1721
   Title: QUADRUPOLE DEFORMATION OF ^{12}BE STUDIED BY PROTON INELASTIC SCATTERING
   First Author: H. IWASAKI
   Journal: Physis Letters B481 p7 2000

3. D1722
   Title: REACTION MECHANISM AND CHARACTERISTICS OF T_{20} IN D+^{3}HE BACKWARD ELASTIC SCATTERING AT INTERMEDIATE ENERGIES
   First Author: M. TANIFUJI
   Journal: Physical Review C61 p024602 1999

4. D723
   Title: PRECISE MEASUREMENT OF DP ELASTIC SCATTERING AT 270 MEV AND THREE-BUCLEON FORCE EFFECTS
   First Author: H. SAKAI
   Journal: Physical Review Letters B84 p5288 2000

5. D1724
   Title: CORE-EXCITED STATES IN THE DOUBLY MAGIC 68NI AND ITS NEIGHBOR ^{69}CU
   First Author: T. ISHII
   Journal: Physical Review Letters B84 p39 2000

6. D1725
   Title: REACTION MECHANISM OF ^{6}LI SCATTERING AT 600 MEV
   First Author: K. SCHWARZ
   Journal: Eur. Phys. J. A 7 p367 2000

7. D1726
   Title: POLARIZATION CORRELATION COEFFICIENT FOR THE ^{3}HE(D,P)4HE REACTION
   First Author: T. UESAKA
   Journal: Physics Letters B467 p199 1999

8. D1727
   Title: (^{6}LI,^{6}HE) REACTION AT 100 MEV/NUCLEON AS A PROBE OF SPIN-EXCITATION STRENGTHS
   First Author: H. UENO
   Journal: Physics Letters B465 p67 1999

9. D1728
   Title: LIFE TIME MEASUREMENTS OF MEDIUM-HEAVY LAMBDA HYPERNUCLEI
   First Author: H. PARK
   Journal: Physical Review C61 p054004 2000

10. D1729
    Title: LEVEL STRUCTURE IN ^{143}ND
    First Author: X. H. ZHOU
    Journal: Physical Review C61 p014303 1999

11. D1730
    Title: TENSOR POLARIZATION OF 12C[2_1^+] in the ^{16}O(^{13}C,^{12}C)^{17}O REACTION AT 50 MEV
    First Author: N. IKEDA
    Journal: Eur. Phys. J. A 7 p491 2000

12. D1731
    Title: ASYMMETRY IN THE NONMESONIC WEAK DECAY OF POLARIZE $^{5}_{\Lambda}$HE HYPERNUCLEI
    First Author: S. AJIMURA
    Journal: Physical Review Letters B84 p4052 2000

13. D1732
    Title: FUSION OF DEFORMED NUCLEI IN THE REACTIONS OF ^{76}GE+^{150}ND AND 28SI+198PT AT THE COULOMB BARRIER REGION
    First Author: K. NISHIO
    Journal: Physical Review C62 p014602 2000

14. D1733
    Title: DOUBLE-PION PRODUCTION INDUCED BY DEUTERON-PROTON COLLISIONS IN THE INCIDENT DEUTERON MOMENTUM RANGE 2.1-3.8 GEV/C
    First Author: T. TSUBOYAMA
    Journal: Physical Review C62 p034001 2000

15. D1734
    Title: NANOSECOND ISOMERS IN NEUTRON-RICH ^{67}CU AND ^{64}CO AND A FAST E3 TRANSITION IN ^{67}CU
    First Author: M. ASAI
    Journal: Physical Review C62 p054313 2000

EXFOR Translation from NRDF

In 2000, we have concentrated our much effort in the field of translation from NRDF to EXFOR. In order to solve the problems that the translation efficiency by the conputational translation system is not high, we had discussions in which O. Schwerere from IAEA joined. He stayed one month in Sapporo and helped our learning how to make EXFOR file by manual. As a result, we revised E016 (31 entries), E017 (9 entries) and E018 (7 entries) which were pointed to have some problems. Furthermore, we made a new file of E019 (12 entries) during stay of Schwerere in Sapporo, and are now making another new file of E020 (10 entries).

We are now going to have two ways of making EXFOR files from NRDF ones; (1) by manual in addition to the old translational system, and (2) by a new translational system which is in construction by Chiba. To translate from NRDF to EXFOR smoothly, we found that the NRDF dictionary must be completed comparing EXFOR codes. However, it is worthwhile to indicate that there are no problems, in principle, in making EXFOR files based on the NRDF data except for several data concerning evaluation and deduced data in NRDF. Furthermore, several codes, for instance Institute Codes, should be proposed as the EXFOR Codes.

Customer Services

Retrieval services of NRDF and EXFOR data are available by using computers in the Hokkaido University Computing Center. In addition to these services, the WWW homepage (http://nucl.sci.hokudai.ac.jp/ ~nrdf/index.html) has been opened to public.
In order to extend the NRDF data service, we have studied a developed retrieval system based on the IntelligentPad.

ANNEX: Organization and members of JCPRG

Advisory committee:

Yasuhisa ABE (Research Institute for Fundamental Physics, Kyoto Univ.)
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Working Staff of Making a Data-base based on IntelligentPad:

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Working Staff of Making a Compiling Editer System:

Hirokazu OHMI(Hiokkaido Univ.)