Japan Nuclear Reaction Data Centre (JCPRG)

Progress Report

Nuclear Reaction Data Centre (JCPRG),
Faculty of Science, Hokkaido University
http://www.jcprg.org

IAEA's Technical Meeting on the
"International Network of Nuclear Reaction Data Centres"
May 4-7, 2021

0. General

The Japan Nuclear Reaction Data Centre (JCPRG) is a research center for nuclear data activities in Hokkaido University Sapporo. The main objectives of JCPRG are as follows:

a) Compilation of nuclear reaction data for two databases, NRDF and EXFOR

b) Evaluation of nuclear reaction data

c) Development of software and systems for compilation and evaluation

d) Education of the graduate school students

1. Compilation

1.1 NRDF

NRDF database is the original nuclear reaction database of JCPRG. Our initial EXFOR entries were provided by converting the NRDF format to the EXFOR format. Nowadays, both NRDF and EXFOR formats are generated simultaneously using the database creation editor HENDEL. From May 2019 to April 2021, we have compiled 64 new papers of charged particle and photonuclear reaction data have been compiled.

1.2 EXFOR

Since the last NRDC meeting, we have transmitted 64 new and 33 revised/deleted entries as 6 trans files (E123-E130, K019-020 and R030) to the NDS open area. Our transmissions are summarized in Tables 1 to 4.

Table 1. EXFOR E-entries transmitted from JCPRG to NDS IAEA in 2019.

TRANS	TRANS Status	ENTRY Tot.	ENTRY New	ENTRY Rev.
E123	Final (2019/07/24)	9	7	2
E124	Final (2020/01/20)	21	21	0
E125	Final (2020/01/21)	16	0	16

Table 2. EXFOR E-entries transmitted from JCPRG to NDS IAEA in 2020.

TRANS	TRANS Status	ENTRY Tot.	ENTRY New	ENTRY Rev.
E126	Final (2020/07/02)	9	8	1
E127	Final (2020/08/11)	5	5	0
E128	Final (2020/08/19)	6	6	0
E129	Final (2020/10/)	4	3	1
E130	Final (2020/10/)	4	4	0

Table 3. EXFOR K-entries transmitted from JCPRG to NDS IAEA in2019.

TRANS	TRANS Status	ENTRY Tot.	ENTRY New	ENTRY Rev.
K019	Final (2019/10/04)	7	7	0
K020	Final (2020/01/21)	5	3	2

Table 4. EXFOR R-entries transmitted from JCPRG to NDS IAEA in 2020.

TRANS	TRANS Status	ENTRY Tot.	ENTRY New	ENTRY Rev.
R030	Final (2020/02/04)	11	0	11

2. System Development

2.1 Data Retrieval System

We have 3 data retrieval systems mentioned below.

- NRDF (http://www.jcprg.org/nrdf/)
- NRDF/A (http://www.jcprg.org/nrdfa/)
- EXFOR/ENDF (http://www.jcprg.org/exfor/)

The relational database management system MySQL has been adopted for the databases to search and retrieve NRDF, EXFOR and ENDF data. For EXFOR, new trans files are copied from the NDS open area, and the MySQL database is updated periodically.

2.2 Coding Software

We have a coding editor and digitizing software applicable for the coding purpose

- Coding editor "HENDEL" (http://www.jcprg.org/manuals/hendel/)
- Digitization software "GSYS" (http://www.jcprg.org/gsys/)