

EXFOR compilation of RIBF data in 2023

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Experimental nuclear reaction data are used in numerous scientific and application fields, such as particle therapy and nuclear medicine. Databases are essential for retrieving necessary nuclear data upon user requests. One such database is the EXFOR library.¹⁾ EXFOR is maintained by the International Atomic Energy Agency (IAEA) and the International Network of Nuclear Reaction Data Centres (NRDC). The NRDC members compile experimental nuclear data and associated information for the EXFOR library.

The Hokkaido University Nuclear Reaction Data Centre (JCPRG) is an NRDC member. It compiles nuclear reaction data of charged-particle-induced and photon-induced reactions obtained in experimental facilities located in Japan. The compilation process involves

- 1) surveying experimental papers of peer-reviewed scientific journals,
- 2) assigning a sequential unique number (entry number) to each paper,
- 3) creating a data file in the EXFOR format (entry),
- 4) requesting numerical data from authors or digitizing numerical data from figures if necessary,
- 5) distributing a set of preliminary entries (Prelim file) to NRDC members,
- 6) providing a timeline of more than a month for reviews of the preliminary entries from the NRDC members,
- 7) revising the entries according to the review comments received from the NRDC members,
- 8) sending a set of the finalized entries (Trans file) to the NRDC members, and
- 9) registering the finalized entries in the EXFOR library.

The compilation process takes several months to complete, and after which, the data are available in the EXFOR library.

Most data produced in RIBF align with the scope of EXFOR. JCPRG prioritizes the compilation of such RIBF data. Herein, we report on our compilation activities related to RIBF data in 2023.

In 2023, we compiled 18 new papers with RIBF data. In the compilation process, we occasionally requested numerical data related to figures from authors. The provided data contributed to the improvement of accuracy and quality of the database. Among the 18 papers, 17 entries were already registered and searchable in the EXFOR library. The entries and data are accessible through entry numbers listed in Table 1. Users can retrieve the data from the IAEA and JCPRG websites.^{2,3)} One entry (E2760)²¹⁾ is currently under review by the NRDC members and will be registered soon.

Table 1. Entry numbers transmitted in 2023.

E136 (Prelim: 2023/1/26, Trans:2023/3/8)			
E2728 ⁴⁾	E2729 ⁵⁾	E2730 ⁶⁾	E2733 ⁷⁾
E2734 ⁸⁾	E2735 ⁹⁾	E2738 ¹⁰⁾	E2739 ¹¹⁾
E137 (Prelim: 2023/4/8, Trans: 2023/6/30)			
E2741 ¹²⁾			
E138 (Prelim: 2023/7/5, Trans: 2023/10/4)			
E2743 ¹³⁾	E2747 ¹⁴⁾	E2748 ¹⁵⁾	E2750 ¹⁶⁾
E139 (Prelim: 2023/10/6, Trans: 2023/11/9)			
E2745 ¹⁷⁾	E2752 ¹⁸⁾	E2753 ¹⁹⁾	E2756 ²⁰⁾
E141 (Prelim: 2023/12/4)			
E2760 ²¹⁾			

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