# EXFOR compilation of RIBF data in 2019

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Nuclear-reaction data support the most essential part of nuclear technologies (*e.g.*, nuclear power production, nuclear fuel cycles, environmental monitoring, dosimetry, radiation safety, radioisotope production, radiotherapy, and medical diagnostics) and sciences (*e.g.*, nuclear physics, nuclear chemistry, geophysics, and astrophysics). Nuclear databases play a vital role in providing the best estimate for nuclear reactions to a wide range of data users in various scientific fields and related areas. One of the largest global nuclear reaction databases open to the public is the EXFOR library (EXchange FORmat for experimental nuclear reaction data).[1] The EXFOR library is a universal common repository for nuclear reactions established in 1967. The International Network of Nuclear Reaction Data Centres (NRDC) maintains the EXFOR library under the auspices of the International Atomic Energy Agency (IAEA).[2] The scope of the EXFOR library covers a wide range of nuclear reactions such as neutron-, charged-particle-, and photon-induced reactions.

Our group, the Hokkaido University Nuclear Reaction Data Centre (JCPRG),[3] was founded in 1973 and joined the NRDC as the first Asian member in 1975. We are responsible for the compilation of charged-particle-, and photon-induced nuclear reactions measured at facilities in Japan.[4] Our contributions to the EXFOR database account for ∼10% of the complete database. The database compilation process involves the scanning of peer-reviewed journals for published papers within the EXFOR scope. A unique entry number is given to each selected paper to be compiled for the EXFOR library. We extract information from the bibliography, experimental setup, measured physical quantities, measured numerical data, and uncertainties. The information is input in a single entry of EXFOR. During this process, we contact the corresponding authors with questions on the contents of the papers and requests for numerical data.

JCPRG has been cooperating with the RIKEN Nishina Center since 2010 for the compilation of data obtained by RIBF, which aims at the enhancement of the availability of the RIBF data. Our activities related to the RIBF experiments are as follows. We have compiled 48 new articles produced at Japanese facilities and modified 42 old entries. This includes 10 articles from RIKEN, 6 new articles, and 4 old entries. The compiled data are accessible by the entry numbers listed in Table 1. The status of those compilations is periodically reported via Nishina Center News.

We acknowledge that collaboration with RIKEN is a great help for us to establish an effective procedure for the compilations. Most of the RIKEN data are very quickly compiled after publication, and the end users can access them smoothly. We also thank all the authors of the RIKEN articles who kindly provided numerical data. This greatly helps increase the accuracy and quality of the database.

Table 1. Entry numbers with references compiled from RIBF data in 2019.

| | | Entries | |
|---|---|---|---|
| New | E2553[5] | E2583[6] | E2584[7] |
| | E2586[8] | E2590[9] | E2592[10] |
| Revised | E2430[11] | E2434[12] | E2493[13] |
| | E2539[14] | | |
| Total | | 10 | |

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