

## EXFOR compilation of RIBF data in 2018

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Nuclear reaction data is the central cohesive source of support for the new advancements in nuclear technology (*e.g.*, nuclear power, fuel cycles, environmental monitoring, dosimetry, radiation safety, radioisotope production, radiotherapy, and medical diagnostics) and science (*e.g.*, nuclear physics, nuclear chemistry, geophysics, and astrophysics). A nuclear database plays a vital role in providing the best estimated nuclear reaction data to a wide range of data users working in various fields of science and related areas. One such database open to the public is the EXchange FORmat (EXFOR) library for experimental nuclear reaction data.<sup>1)</sup> The EXFOR database is the universally common repository for nuclear reactions, which was established in 1967, and is maintained by the International Network of Nuclear Reaction Data Centres (NRDC) under the auspices of the International Atomic Energy Agency (IAEA).<sup>2)</sup> The scope of EXFOR covers a wide range of nuclear reactions such as neutron-induced, charged-particle, and photon-induced reactions.

The Hokkaido University Nuclear Reaction Data Centre (JCPRG)<sup>3)</sup> was founded in 1973 and has been a member of NRDC since 1975. JCPRG is responsible for the compilation of charged-particle and photon-induced nuclear reactions measured at the facilities located in Japan.<sup>4)</sup> The contribution of JCPRG to the EXFOR database amounts to  $\sim 5\%$  of the total entries.

Our compilation process involves the scanning of peer-reviewed journals for the published papers that meet the scope of EXFOR. A unique entry number is assigned to each selected paper to be compiled for the EXFOR library to track progress in compilation. The compilers extract the bibliographic information, experimental set up, measured physical quantities, measured numerical data, and error information that are given as input to a single entry of EXFOR. During this process, we contact the corresponding authors for questions on the content of the papers and requests for numerical data.

JCPRG has cooperated with the RIKEN Nishina Center for the compilation of data obtained in RIBF since 2010. The purpose of this cooperation is to increase the availability of nuclear reaction data obtained at RIBF. In this article, we report our activities related to the RIBF data. In 2018, we compiled 53 new papers reporting the experiments performed at Japanese

Table 1. Entry numbers with references compiled from RIBF data in 2018.

Enteries	E2516 <sup>5)</sup>	E2542 <sup>6)</sup>	E2543 <sup>7)</sup>
	E2549 <sup>8)</sup>	E2553 <sup>9)</sup>	E2554 <sup>10)</sup>
	E2557 <sup>11)</sup>	E2561 <sup>12)</sup>	E2562 <sup>13)</sup>
	E2574 <sup>14)</sup>	E2575 <sup>15)</sup>	E2576 <sup>16)</sup>
	E2578 <sup>17)</sup>	E2580 <sup>18)</sup>	
Total	14		

facilities and out of these, 14 papers were based on RIBF data. All authors of these 14 entries had kindly provided us the numerical data. The compiled data is accessible by the entry numbers listed in Table 1.

We have established an effective procedure to compile all new publications during the last eight-year collaboration with the RIKEN Nishina Center. Therefore, most of the recent experimental nuclear reaction data is provided by the corresponding authors. This cooperation is valuable and effective, and essential for continuing rapid and reliable compilation.

We would like to take this opportunity to express our gratitude to the authors of these papers for their kind cooperation with the EXFOR compilation process.

### References

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