

## EXFOR compilation of RIBF data in 2022

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Nuclear databases are crucial for providing the best estimates of nuclear reactions to a wide range of data users in various scientific and related fields. Among them, nuclear reaction data support the most important aspects of nuclear technology (nuclear power generation, nuclear fuel cycle, environmental monitoring, dosimetry, radiation safety, radioisotope production, radiation therapy, medical diagnosis, *etc.*) and science (nuclear physics, nuclear chemistry, geophysics, space physics, *etc.*).

The EXFOR library (EXchange FORmat for experimental nuclear reaction data) is the largest and most globally used publicly available database.<sup>1)</sup> It is maintained by the International Network of Nuclear Reaction Data Centers (NRDC) under the auspices of the International Atomic Energy Agency (IAEA).<sup>2)</sup> The scope of the EXFOR library covers a wide range of nuclear reactions such as neutron-induced, charged-particle, and photon-induced reactions.

The Hokkaido University Nuclear Reaction Data Center (JCPRG)<sup>3)</sup> was established in 1973 and joined NRDC in 1975 as the first member from Asian countries. The JCPRG is responsible for compiling nuclear reaction data with charged particles and photons measured at Japanese facilities,<sup>4)</sup> and its contribution to the EXFOR database amounts to approximately 10% of the total database. The database compilation process begins with scanning of peer-reviewed journal papers published within the scope of EXFOR. Subsequently selected papers are assigned to unique entry numbers and entered into the EXFOR library, where the editorial progress can be monitored. Bibliographic information, experimental equipment, physical quantities measured, numerical data measured, and error information are extracted and entered into a single EXFOR entry. During this process, we communicate with the authors, asking questions regarding the content of their paper, and requesting numerical data.

Aiming to increase the availability of RIBF data, JCPRG has been compiling data obtained from RIBF since 2010 in cooperation with the RIKEN Nishina Center. The new EXFOR data related to RIBF experiment are as follows. We have compiled 40 new papers and revised 3 old entries, of which 17 were from RIKEN; 17 new papers. We can access these data based on the entry numbers presented in Table 1.

Collaboration with RIKEN has aided in the establishment of an efficient procedure for compilation. Much of the RIKEN data was compiled soon after the

publication of the papers, allowing for smooth access by end users. We are also grateful to the authors of the RIKEN papers who have provided us with numerical data. This has greatly helped to improve the accuracy and quality of the database.

Table 1. Entry numbers with references compiled from RIBF data in 2022.

		Entries		
New	E2620 <sup>5)</sup>	E2659 <sup>6)</sup>	E2682 <sup>7)</sup>	
	E2685 <sup>8)</sup>	E2687 <sup>9)</sup>	E2689 <sup>10)</sup>	
	E2693 <sup>11)</sup>	E2697 <sup>12)</sup>	E2698 <sup>13)</sup>	
	E2703 <sup>14)</sup>	E2704 <sup>15)</sup>	E2705 <sup>16)</sup>	
	E2712 <sup>17)</sup>	E2713 <sup>18)</sup>	E2715 <sup>19)</sup>	
	E2722 <sup>20)</sup>	E2723 <sup>21)</sup>		
Total		17		

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

### References

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