

Consultancy Meeting on Information Exchange on Developments and Operations of Nuclear Data Dissemination Services

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IAEA Nuclear Reaction Dataexplorer Developments

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An efficient and easy data access to the nuclear reaction data are essential to enhance the understanding and explanation of the fundamentals of theory and experiments of nuclear reaction physics. The Experimental Nuclear Reaction Database (EXFOR) has a potential for utilization of modern computational analysis techniques to find hidden patterns by using machine learning (ML) applications, which helps improve our knowledge of nuclear reactions and accelerates the developments in the field. To facilitate such a study, EXFOR structure and data parsing computer program, EXFOR Parser, was developed. The EXFOR Parser converts EXFOR format into the widely adopted JSON format, and extract physical quantities in tabulated (x, y, dx, dy) datatable and stores into SQL database.

The RESTful APIs and the data plotting interface were built using Python on Flask and Dash, respectively, for easy access and quick visualizations of these converted datasets.

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