

NUCLEAR DATA ONLINE SERVICES AT PEKING UNIVERSITY

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The online services of China's nuclear science and industry field via the Internet have quickly grown since 1990'. Although some of Chinese nuclear institutes, companies and departments of universities have constructed their own networks and offered various nuclear information services, there is not any web-based numerical nuclear data service through the Internet (Worldwide Web, Telnet, and FTP) before 2001. Most of Chinese users and the public have limited success in accessing the nuclear data information service of international community. In order to change this situation, a new project was sponsored and funded in the beginning of 2001 by the Minister of Education of China. Its primary goal is to distribute international major nuclear data libraries via the Internet networks and to facilitate the visualization and manipulation of nuclear data by developing a web-based nuclear data services software system named as Nuclear Data Online Services (NDOS) at Peking University.

Using advanced relational databases and web-based information technologies, the NDOS system offers the online data services of a centralized repository of data including 8 major international nuclear data libraries for nuclear reaction data and for nuclear structure and decay data: 5 ENDF format evaluated databases (BROND-2.2, CENDL-2.1, ENDF/B-VI, JEF-2.2, and JENDL-3.3), ENSDF (Evaluated Nuclear Structure Data File) for nuclear structure and radioactive decay data, EXFOR (Exchange FORmat) for experimental data and the international photonuclear data files. The ENDF, ENSDF, EXFOR and photonuclear data files also introduce online data plotting capabilities. The version 1.0 of this software was tested and released in Sep. 2001, which only presented the comprehensive library of JENDL3.2 and the online plotting display of cross section data. In May 2002, the version 2.0 was released and presented the full relational versions of five ENDF format evaluated neutron data libraries, the ENSDF library, the EXFOR library and the international photonuclear data library.

The computer programs providing support for database management and data retrievals are based on the Linux implementation of PHP and the MySQL software. PHP language is used for common software development, including programs for data loading and updating, as well as programs for access to the data through Web. The MySQL software, the SQL-compliant relational database management system (RDBMS) software, is the platform for nuclear data. The relational nuclear databases and data services are platform independent in a wide sense. The databases and main data services of the NDOS system resides on a PC workstation, which is maintained and hosted by the IHIP (Institute of Heavy Ion Physics) of Peking University, China. The most management functions of this system such as database adding, data loading and updating can be remotely implemented.

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