

Center of Nuclear-Physics Data (CNPD) RFNC-VNIIEF

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S.A. Dunaeva

Russian Federal Nuclear Center - VNIIEF

Russia, 607190, Sarov, Nizhnij Novgorod region, pr. Mira 37

The tasks of the center are:

- compilation of the experimental nuclear data;
- cross section estimation of the nuclear reactions;
- upgrade and establish software for operation with nuclear data;
- distribution of the nuclear data;
- creation of the task-oriented databases.

Compilation.

At the last year we are still correcting and transferring data from our library to EXFOR format and compiling new experimental works.

Data compilation and correction have been made using VMS operating system with the help of the NNDC software.

A total of 89 EXFOR entries for charged particle induced experiments were compiled and transmitted to the other data centers at 1999. Unfortunately we could not make last TRANS with corrections. We continue work up all corrections and new entries.

Also we work in collaboration with NNDC at the T series data compilation.

We continue neutron data compilation in collaboration with CJD. Now we compile γ -total cross sections of the inelastic interaction of the 14 MeV neutrons with C, O, Mg, Al, Fe, Cu, Zr, Mo, W and Pb nuclei according to the ISTC project #731.

Evaluation.

The γ -total cross section evaluation of the 14 MeV neutrons of the inelastic interaction with Al, Fe, Cu, ^{11}B , ^{10}B and Pb nuclei was done according to the ISTC project #731. The results were discussed on the International Conference on Radiation Shielding in Japan.

Also the cross section adoption of the charged particles interaction with Be, B and O nuclei was done. The results we re published in the "Nuclear Constants" series, VANT.

Data distribution.

Nuclear data were distributed in the other institutes. Most of them are from Russia or Former Soviet Union.

Software.

At the last year a new version of the EXFOR and NSR software were installed. Previously the NSR software used only for the whole data exchange. In this situation the exchange is available only by DEC-tape. But this way is the old one. In the age of Internet we may transmit data by it and add databases in time. But it is difficult to transmit the whole database and it isn't need. We discussed this problem with David Winchell from NNDC, who is developer of this software. We reached the agreement with David, about transmission of the new software. New version of the NSR software supports partly addition of the database only by new data. We

appreciate David for help, supporting and submitting new software to our Center. Now we haven't problems with the current updating NSR database.

We continue developing the software for supporting evaluated databases in the Windows NT. About this software we discuss separately with it demonstration on the computer.

Task-oriented databases

At The December 1999 electronic version of the experimental and evaluated data on charged particles for fusion application (SaBa) was submitted to IAEA. Sophia Taova will demonstrate it on the computer and tell about it developing in details.

At the November 1999 database for Customs application was developed in our Center. It contains the most important information that customers need for checking of the radioactive and fissionable materials that go across the state border. Customs documentation and control for radioactive fission materials are the objects of this database.

The data from ENSDF about radioactive nuclei energy levels were included in the database as a part of information that is needed to customers in their work.

We plan to organize section on our institute site for these databases.

Staff

Five persons are working on the tasks in part-time. Next year ISTC project 1145 will be finish and our main problem now is to continue it.

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4. L.M. Lazarev, B.M.Dzjuba, A.G. Zvenigorodskij, S.Skidan. Evaluated data and astrophysical S-factor of the p,γ reaction on the C, N, O nuclei. VANT, ser. Nuclear Constants, 1999, iss.1, p.71-96.
5. L.M. Lazarev, B.M.Dzjuba. Phase analysis of the $pt, p^3\text{He}$ elastic scattering in the 0-20 MeV range. VANT, ser.Nuclear Constants, 1999, iss.1, p. 56-70.
6. A.G. Zvenigorodskij, V.A. Zhrebtsov, L.M. Lazarev, S.A. Dunaeva, L.N. Generalov, S.M. Taova, E.V. Kamskaya, R.I. Marshalkina. The library of evaluated and experimental data on charged particles for fusion application. IAEA-NDS-191, December 1999.