

Ukrainian Nuclear Data Centre Progress Report, 2010/11
Summary of Nuclear Data Studies by Staff of the Ukrainian Nuclear Data Centre
Editor: O. Gritzay

Technical Meeting on the
International Network of Nuclear Reaction Data Centres
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Web: <http://ukrndc.kinr.kiev.ua/>
e-mail: ogritzay@kinr.kiev.ua

Ukrainian Nuclear Data Centre (UkrNDC) is subdivision within the Neutron Physics Department at the Institute for Nuclear Research of the National Academy of Sciences of Ukraine. UkrNDC has 5 permanent researchers. During year under review three members of the staff were involved in experimental neutron data measurements at the Kyiv research reactor.

Compilation

We continue collection and compilation of experimental neutron, charged particle and photonuclear data. Number of the EXFOR's entries sent to the NDS IAEA by UkrNDC are the following.

New:

- for neutron data – 1 entries (32231);
- for charged particle data – 4 entries (D5074,D5075, D5077,D5078) ;
- for photonuclear data – 4 entries (G4030 - G4033).

Improved:

- for neutron data – 5 entries (32217, 32219, 32222 – 32224);
- for charged particle data – 15 entries (D5001, D5002, D5023, D5030, D5039-D5042, d5051, D5066 - D5068, D5070, D5071, D5073);
- for photonuclear data – 2 entries (G4011, G4018).

We realize review of compilation scope in home journals:

- "Nuclear Physics and Atomic Energy";
- "Ukrainian Journal of Physics";
- "Problems of Atomic Science and Technology", Series "Nuclear Physics Investigations".

Collaboration

We continue our collaboration with the Nuclear Physics Department of the Taras Shevchenko National University of Kyiv.

- The teaching course “*Nuclear Data for Science and Technology and modern computer codes for nuclear data processing*” (36 hours) has been lectured in 2010-2011 for the fifth-course students of NPD KNU. This course includes the following items: ENDF/B libraries, EXFOR system, ENSDF library, the use of the PREPRO code in work with the ENDF libraries, the introduction to NJOY code system, the Network of Nuclear Reaction Data Centers and the use of the on-line services.

- The teaching courses “*Neutron Physics*” (72 hours) and “*Neutron Physics at the Kyiv Research Reactor*” (experimental work, 36 hours) are lectured in 2010-2011 for fourth-year students of NPD KNU.
- The teaching course “*Experimental Methods at Atomic Power Engineering*” (17 hours) are lectured in 2011 for third-year students of NPD KNU.

We continue our collaboration with Pavel Sukhoi State Technical University of Gomel in frame of the task on development and organization of scientific methodology and information databases for nuclear technology calculations in the Republic of Belarus.

Customer Services

- During 2010-2011 the data for users requests were prepared and adapted (from ENDF, ENSDF and EXFOR libraries) for our institute researchers and for ones from other institutes. The organizations, whose requests on nuclear data have arrived and were executed in the accounting period:
 1. Department of Nuclear Physics of the Institute for Nuclear Research (INR) of NASU.
 2. Department of the Theory of Nuclear Reactions INR of NASU.
 3. Department of Nuclear Reactions INR of NASU.
 4. Department of Nuclear Physics of Kyiv National University.
- The UkrNDC site is operating. Ukrainian customers, especially students and those physicists, who wish to prepare the pointwise and multigroup cross sections self-dependently, but do not have a good experience in it, use this site very often. Address of the UkrNDC site: <http://ukrndc.kinr.kiev.ua>.

Experimental Neutron Data Measurements

- The total neutron cross sections for natural hafnium were measured using neutron filtered beam with the average energy 59 keV.
- The total neutron cross section for natural carbon in the 150 keV energy region are in development.

Visits and Conferences

- O. Gritzay, O. Kalchenko, N. Klimova, A. Grymalo took part in the 3rd International Conference Current Problems in Nuclear Physics and Atomic Energy, which was held 7 - 12 June, 2010 in Kyiv, UKRAINE.
- O. Gritzay took part in a Consultancy Meeting "Neutron sources spectra for EXFOR", which was held 13 - 15 April 2011 at the IAEA's Headquarters, Vienna, Austria.