

Ukrainian Nuclear Data Centre Progress Report, 2009/10
Summary of Nuclear Data Studies by Staff of the Ukrainian Nuclear Data Centre
Editor: O. Gritzay

**The IAEA Technical Meeting of Nuclear Reaction Data Centers (NRDC),
20 – 23 April 2010, Sapporo, JAPAN**

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Introduction

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 NDS IAEA by UkrNDC are:

- for neutron data – 5 entries, 1 renew entry;
- for charged particle data – 7 new entries, 2 renew entries;
- for photonuclear data – 2 entries.

The list is presented in Table.

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 the collaboration with the 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*" (72 hours) are lectured in 2009-2010 for graduate course students of NPD KNU. These courses include the following items: ENDF/B libraries, EXROR 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.

We are starting the 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.

Table. EXFOR's entries sent to NDS IAEA by UKRNDNC

#	ENTRY (subent)	Reference(s)	Authors
<i>Neutron data</i>			
1	32225 (2)	J,IZV,72,(11),1664,2008 J,BAS,72,1577,2008	I.N.Vishnevsky, V.O.Zheltonozhsky, E.V.Kulich, A.N.Savrasov, N.V.Strilchuk
2	32226 (11)	C,87KIEV,3,217,1987	R.M.Musaelyan, V.D.Ovdienco, N.T.Sklyar, V.M.Skorkin, M.B.Fedorov, T.I.Yakovenko
3	32227 (12)	J,UFZ,34,(8),1173,1989	I.A.Korzh, V.A.Mishchenko, V.D.Ovdienco, M.V.Pasechnik, N.M.Pravdivy
4	32228 (32)	J,AE,67,(2),147,1989 J,SJA,67,669,1989 C,87KIEV,3,152,1987	V.A.Mishchenko, I.A.Korzh, N.M.Pravdivy
5	32230 (13)	J,AE,62,(6),417,1987 J,SJA,62,487,1987	I.A.Korzh, V.A.Mishchenko, N.M.Pravdivy
6 renew	32201 (5)	J,UFZ,39,785,1994	I.A.Korzh, V.A.Mishchenko, N.M.Pravdivy N.T.Sklyar, D.A.Bazavov, V.P.Lunyov
<i>Charged particle data</i>			
1	D5067 (9)	J,YFE,3/25,53,2008	O. O. Beljuskina, V. I. Grantsev, V. M. Lebedev, A. L. Litvinsky, K. K. Kisurin, G. P. Palkin, S. E. Omelchuk, J. S. Roznyuk, B. A. Rudenko, V. S. Semenov, L. I. Sljusarenko, B. G. Struzhko, V. A. Shytiuk
2	D5068 (4)	J,IZV,72,(11),1630,2008 J,BAS,72,1544,2008	A.S.Kachan, I.V.Kurguz, I.S.Kovtunenکو, V.M.Mischenکو
3	D5069 (2)	J,IZV,72,(11),1664,2008 J,BAS,72,1577,2008	I.N.Vishnevsky, V.O.Zheltonozhsky, E.V.Kulich, A.N.Savrasov, N.V.Strilchuk
4	D5070 (6)	J,UFZ,54,(7),658,2009 J,VAT/I,5/52,17,2009	O.O.Belyuskina, V.I.Grantsev, V.V.Davydovskyy, K.K.Kisurin, S.E.Omelchuk, G.P.Palkin, Yu.S.Roznyuk, B.A.Rudenko, L.S.Saltykov, V.S.Semenov, L.I.Slusarenko, B.G.Struzhko, V.K.Tartakovskyy, V.A.Shytiuk
5	D5071 (2)	C,2008MACKIN,,(098),2008	Ye.Skakun, S.Utenkov, A.Goncharov, V.Mishchenko, G.G.Kiss, T.Rauscher
6	D5072 (10)	J,NP/A,831,139,2009	A.T.Rudchik, Yu.M.Stepanenko, K.W.Kemper, A.A.Rudchik, O.A.Ponkratenko, E.I.Koshchy, S.Kliczewski, K.Rusek, A.Budzanowski, S.Yu.Mezhevyeh, Val.M.Pirnak, I.Skwirczynska, R.Siudak, B.Czech, A.Szczurek, V.V.Uleshchenko, J.Choinski, L.Glowacka
7	D5073 (8)	J,YF,71,(10),1742,2008 J,PAN,71,(10),1711,2008 J,VAT/I,5/48,13,2007	V.I.Grantsev, V.V.Davydovskyy, K.K.Kisurin, S.E.Omelchuk, G.P.Palkin, Yu.S.Roznyuk, B.A.Rudenko, L.S.Saltykov, V.S.Semenov, L.I.Slusarenko, B.G.Struzhko, V.K.Tartakovskyy, V.A.Shytiuk

8 renew	D5001 (13)	J,YF,61,(9),1569,199809	E.P.Kadkin, S.N.Kondratyev, A.YU.Konobeev, V.P.Lunev, L.S.Saltikov, V.D.Sklyarenko, L.I.Slusarenko, V.V.Tokarevsky, N.P.Yurkuts
9 renew	D5062 (6)	J,YFE,2/24,24,2008 J,PR/C,79,054609,2009	V.O.Romanyshyn, A.T.Rudchik, E.I.Koshchy, O.A.Ponkratenko, S.Kliczewski, A.Budzanowski, K.Rusek, L.Glowacka, S.Yu.Mezhevyeh, Val.M.Pirnak, A.A.Rudchik, I.Skwirczynska, R.Siudak, J.Choinski, B.Czech, A.Szczurek
<i>Photonuclear data</i>			
1	G4028 (2)	J,IZV,73,(6),782,2009 J,BAS,73,(6),733,2009	I.N.Vishnevsky, O.I.Davidovskaya, V.A.Zheltonozhsky, A.N.Savrasov
2	G4029 (3)	J,YFE,10,(2),146,2009	O.A.Bezshyyko, A.N.Vodin, L.O.Golinka-Bezshyyko, A.N.Dovbnya, I.M.Kadenko, O.A.Kovalenko, V.A.Kushnir, A.I.Levon, V.V.Mitrochenko, S.N.Olejnik, G.E.Tuller

Customer Services

- During 2009-2010 the data for users requests were prepared and adapted (from ENDF, ENSDF and EXFOR libraries) for researchers from:
 1. Department of Nuclear Physics of the Institute for Nuclear Research (INR) of NASU.
 2. Department of Nuclear Reactions INR of NASU.
 3. Department of Nuclear Reactor Theory INR of NASU.
- English and Ukrainian versions of the UkrNDC site were updated. The main changes have concerned the following: replacement of the antecedent versions of the ENDF libraries and the PREPRO codes by the new versions of them, creation of new own codes for the preparation of input files for the LINEAR, RECENT, SIGMA1, GROUPIE, MIXER codes in semi-automatic mode, etc. 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 neutron cross sections for natural hafnium, carbon, and chromium were measured using neutron filtered beams at the Kyiv research reactor.