The CDFE photonuclear data compilations and evaluations in 2015 – 2016.

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Progress report to the Technical Meeting on the International Network of Nuclear Reaction Data Centres at the Nuclear Data Centre, Atomic Energy of China (CAEA), Beijing, China, from 7 to 10 June 2016.

This short report contains review of the main results obtained at the Russia Lomonosov Moscow State University Skobeltsyn Institute of Nuclear Physics Centre for Photonuclear Experiments Data (Centr Dannykh Fotoyadernykh Eksperimentov – CDFE) concern photonuclear data compilation and correction, analysis and evaluation and nuclear data service in the whole for the period of time from the IAEA's Technical Meeting On International Network of Nuclear Reaction Data Centers" (NRDC), 21 – 23 April 2015, IAEA's Headquarters, Vienna, Austria till the summer of 2016.

General

The main CDFE responsibility in the NRDC Network is compilation and processing of photonuclear data. The main CDFE scientific activity is evaluating of photonuclear data obtained in various experiments.

The CDFE total permanent stuff includes now five professional, three general service officers and several students of the MSU Physics Faculty.

The CDFE nuclear data activities in the whole are dissemination of international nuclear data for providing Lomonosov Moscow State University (Skobeltsyn Institute of Nuclear Physics, primarily) and scientific and educational institutes and organizations of Russian Academy of Science for basic research, education and various applications. The CDFE maintains several nuclear databases available through the CDFE Web-site – http://cdfe.sinp.msu.ru. The

EXFOR Compilation

5 new CDFE EXFOR **TRANS.M078 - 082** and one **PRELIM.M083** TRANSes have been produced and transmitted to the IAEA NDS. All TRANSes are prepared in addition to a number of new ENTRYs contain many old ENTRYs corrected in accordance with the NRDC Network experts comments and recommendations.

The majority of prepared ENTRYs contains old photonuclear data corrected in accordance with new EXFOR format rules. I would like to acknowledge very much Svetlana

Dunaeva for great help and assistance in finding mistakes and doing corrections and Naohiko Otsuka and Oscar Cabellos for many very important and useful comments.

On the whole new CDFE trances have been produced in the reported period contain 121 corrected and 19 new ENTRYs:

TRANS	Old	**New**	Total
M078	5	**7**	12
M079	7	**3**	10
M080	3	**5**	8
M081	33	**3**	36
M082	57	**1**	58
prelim.M083	16	**0**	16
All	121	**19**	140

Photonuclear Data Evaluation

In addition to activity in photonuclear data compilation and processing the CDFE continues the program of investigation of reliability of experimental data for photonuclear total and partial reaction cross sections obtained using various methods and of reliable photonuclear data evaluation. For that specially proposed physical criteria of data reliability and new experimental-theoretical method for evaluation of reliable partial ((γ,n), (γ,2n), (γ,3n)) and total photoneutron reaction (γ,tot) = (γ,n) + (γ,2n) + (γ,3n) cross sections are used. The correspondent analysis and evaluations for many nuclei (^{63,65}Cu, ^{80}Se, ^{91,94}Zr, ^{115}In, $^{116\text{-}124}$Sn, ^{133}Cs, ^{138}Ba, ^{181}Ta, $^{186\text{-}192}$Os, ^{197}Au, ^{208}Pb, ^{209}Bi) will be used in the frame of the IAEA Coordinated Research Project N F41032 (Research Contract N 20501) and be presented at the International Conference on Nuclear Data for Science and Technology (Bruges, Belgium, 11-16 September, 2016).

New reliable evaluated data were included into the EXFOR database.

Nuclear Database Service

The CDFE maintains several nuclear databases on the Web-site (http://cdfe.sinp.msu.ru).

Main of those DB are produced and maintained using data funds of Nuclear Reaction Data Centres Network, USA NNDC and NSDD:

- "Nuclear Reaction Database (EXFOR)";
- "Complete Nuclear Spectroscopy Database "Relational ENSDF" (Evaluated Nuclear Structure Data File);
- "Nuclear Physics Publications ("NSR" Database)".

Additionally CDFE produced and maintains several another DB:

- digital "Chart of Giant Dipole Resonance Main Parameters" (energy position, amplitude, width, integrated cross section of GDR;
- digital "Chart of Nucleus Shape and Size Parameters" (data on quadrupole moments, parameters of quadrupole deformation and charge radii; "Nucleus Ground and Isomeric State Parameters" (many useful information (masses, binding energy, nucleon separation energy, decay mode, energy of various decays, etc) on the nucleus as whole and its ground and isomeric states properties);
- "Calculator and Graph Engine for Atomic nuclei Parameters and Nuclear reactions and Radioactive Decays Features" (possibility for convenient calculation of various parameters and characteristics of nuclei, nuclear reactions and nuclear decays).

Short-term (2016/2017) Program

The main items of CDFE (2016/2017) program, main priorities and most important tasks are traditional and the following:

- continuation of new photonuclear data compilation using EXFOR format, new TRANSes (M084, M085, etc.) production;
- correction of old ENTRYs in accordance with new EXFOR coding rule changes and the NRDC Network experts comments and recommendations;
- continuation of joint analysis and evaluation using objective physical criteria of total and partial photonuclear reaction cross sections obtained in various experiments;
- upgrading of all databases put upon the CDFE Web-site (http://cdfe.sinp.msu.ru).