

# **Ukrainian Nuclear Data Centre**

**Progress Report, 2015/16**

**Technical Meeting on the International Network of NRDC**

**3 - 7 June 2016, Beijing, China**

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# Introduction

**UkrNDC** is subdivision within the Neutron Physics Department at the Institute for Nuclear Research of the National Academy of Sciences of Ukraine

**UKRNDC has:**

- **3 permanent researchers**
- **They are also involved in the experimental neutron data measurements at the Kyiv research reactor**

# Compilation

Continue collection and compilation of experimental data

**New/renew entries sent to NDS:**

- for charged particle: **11 entries**
- for photonuclear data: **1 entry**

# Compilation (continue)

## Review of compilation scope in

### home journals and scientific issues:

- Nuclear Physics and Atomic Energy
- Ukrainian Journal of Physics
- Problems of Atomic Science and Technology,  
Series: Nuclear Physics Investigations
- **Uzhhorod University Scientific Herald, Series: Physics;**
- **Bulletin of Taras Shevchenko National University of Kyiv**  
**Series: Physics & Mathematics**
- East European Journal of Physics

### in the journal

Bulletin of the Russian Academy of Sciences, Series: Physics

# Collaboration

**Continue collaboration with the PD 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" (38 hours) was lectured in 2015 for the fifth-course students*
- *The teaching courses "Experimental Methods at Atomic Power Engineering" (38 hours) is lectured in 2016 for third-year students*

# Collaboration (continue)

**Continue collaboration with the Power Systems Physics Department of the Physics and Technology Institute of National Technical University of Ukraine "Kyiv Polytechnic Institute":**

- *The teaching course "Nuclear Data" (38 hours) is lectured in 2016 for fifth-year students of this department*
- *The teaching course "Nuclear and Thermonuclear Power " (48 hours) is lectured in 2016 for fourth-year students of this department*



# Collaboration (continue)

We continue 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

**The data from ENDF, ENSDF and EXFOR libraries was prepared and adapted on demand of the users from:**

- **Uzhgorod Institute of Electron Physics of NASU**
- **Department of Nuclear Physics of the INR of NASU**

**UKRNDC site is operating - for students and Ukrainian customers, who wish to prepare special libraries self-dependently.  
Address: <http://ukrndc.kinr.kiev.ua>**

**Ukrainian version of the UkrNDC site has been updated.  
Seven codes (CR-LIB, PD-ORI, LIN, REC, SIG, GRO, MIX) were created and included in this new version. The code package FILTER was transformed (the FILTER-8 code was updated) and included in the new version of the UkrNDC site.**

**English version updating is in progress.**



# Experimental & Computational Activity

- A method of experimental verification to resolve the contradiction in neutron cross sections in the ENDF libraries was developed. The method was experimentally demonstrated by the example of cerium, which according to the latest versions of the four ENDFs have significantly different total neutron cross section.
- A method of determination of the resonance parameters from a set of the average total neutron cross sections, received with using a shift of the average energy of the filtered neutrons is in progress. The method was experimentally demonstrated by the example of  $^{52}\text{Cr}$ .
- The numerical view of the neutron spectrum after the interference filters used at the Kyiv Research Reactor have been prepared.

*Thank You*

*for Your attention!*

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