

CONCLUSIONS AND ACTIONS

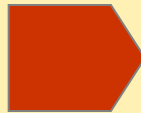
Conclusions

Tools for Compilation and Dissemination

- C16 The largest bases must be chosen for both x- and y-axis to minimize fractional error when digitization is performed.
- C17 Centres are encouraged to provide suggestions to improve accessibility of a specific type of data on EXFOR retrieval systems.
- C18 Centres should consider EXFOR knowledge distribution strategy.

How to meet with EXROR?


EXFOR USERS




- **Researches**
- **Students**

Solution:

Printed advertisement

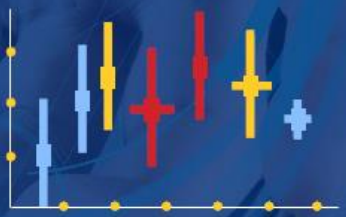


International Atomic Energy Agency
Nuclear Data Services




EXPERIMENTAL
NUCLEAR
REACTION
DATA LIBRARY

EXFOR




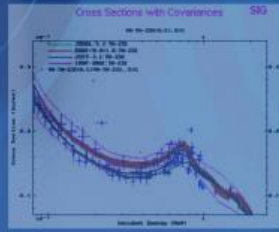
**EXFOR RETRIEVAL SYSTEMS
OF NRDC ARE AS FOLLOWS:**

[http://www.nndc.bnl.gov/exfor/;](http://www.nndc.bnl.gov/exfor/)
[http://www.oecd-nea.org/janisweb/search/exfor/;](http://www.oecd-nea.org/janisweb/search/exfor/)
[http://www.jcprg.org/exfor/;](http://www.jcprg.org/exfor/) [http://spes.jaea.go.jp/;](http://spes.jaea.go.jp/)
[http://cdfe.sinp.msu.ru/exfor/.](http://cdfe.sinp.msu.ru/exfor/)



EXFOR:

- THE FORMAT
- THE LIBRARY ITSELF
- THE INFORMATION SYSTEM

EXFOR: THE FORMAT

EXFOR=Exchange FORmat

- was developed for the data exchange under coordination of the IAEA Nuclear Data Section (NDS) in 1969. Nowadays 14 members of the International Network of Nuclear Reaction Data Centres (NRDC) compile and maintain data for the EXFOR.
- is machine-readable format for checking and for further data processing. EXFOR includes dictionaries and rules.
- can be read by a human.



EXFOR: THE LIBRARY ITSELF

- stores the experimental nuclear reaction data on interactions of neutrons (≤ 1 GeV), light charged particles ($A \leq 12$), heavy ions ($A > 13$), photons.
- stores numeric data, bibliographic information and experimental information about the data, the source of the data and history. Up to May 2016 EXFOR included 21 257 descriptions of experiments, data on 164 685 nuclear reactions, 13 626 107 total number of data points.
- stores integral and partial cross sections (excitation functions, spectrum averaged data, ratios, etc.), differential cross sections (angular distributions, Legendre coefficients, secondary particle spectra, double-differential cross sections, polarization data, etc.), resonance parameters, fission product yields, fission quantities, product yields, thick target yields, reaction rates, resonance integrals, etc.
- is the basis for the majority of the evaluated nuclear application libraries.

EXFOR: THE INFORMATION SYSTEM

- is effective retrieval and processing system. NRDC EXFOR Web Service (supported by NDS) is <http://www-nds.iaea.org/exfor/>. Such criteria of search as target, reaction, quantities, products, energies, information about experiment, bibliographic reference, text-patterns and keywords are provided. Autonomous CD version of the EXFOR Library with retrieval system is regularly issued by NDS.
- EXFOR retrieval system offers the original format (X4) and several end-user formats for different needs. The "interpreted" formats (X4+, X4±, X4XML) give the user explanations of the internal codes and abbreviations, provide access to experimental data in formats appropriate for users. The "computational" formats (C4, C5, C5M) deliver data from EXFOR to users in format simple for software development and can include tabular data of one specific reaction/quantity ratio from various measurements.
- EXFOR processing system displays data on graphs in static and interactive plots with option for uploading of users' data for comparison with the possibilities of drag-and-drop zoom, lin/log scaling, copy/paste data between systems, output to: PS, PDF, animated GIF, Html, ENDF6, Fortran data, etc.
- EXFOR processing system provides the following services: on-line re-calculations of cross sections: inverse reactions and, inverse kinematics, automatic re-normalization, user's corrections, experts' corrections, constructing a covariance matrix from EXFOR uncertainties, etc.

This booklet is a result of activity of all NRDC members

Waiting for notes, remarks, proposals...

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4. V.Zerkin. New features of NDS Web systems. Technical Meeting NRDC-2015.
5. V.Zerkin. EXFOR format: problems of extension and possible solutions. Consultant's meeting 6 - 9 March 2012, Vienna.
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