



International Atomic Energy Agency

**Updates of
EXFOR Compilation Web Tool**

Naohiko Otuka

IAEA Nuclear Data Section

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Web Tool on JCPRG Server

<http://www.jcprg.org/exfor/tool/>



北海道大学大学院理学研究院附属
原子核反応データ研究開発センター
Hokkaido University Nuclear Reaction Data Centre

| NRDF | EXFOR | CINDA | ENDF | English | Japanese | Internal

Hokkaido University Nuclear Reaction Data Centre (JCPRG) EXFOR Compilation Tool

CHEX, ORDER and XTRACT have been developed by Victoria McLane (NNDC) and maintained by Viktor Zerkin (IAEA-NDS). XDOMINO has been developed by Shuji Yamaguchi (JCPRG). JANIS Trans Checker is maintained by Nicolas Soppera (NEA DB). EXFOR Converter System is maintained by Viktor Zerkin (IAEA-NDS).

Processing of a trans tape against chex, order, janis etc.

選択されていません

Extraction of bibliography from a doi (e.g., 10.1016/j.nds.2014.07.065) or EXFOR code (e.g., J,NDS,120,272,2014)

Feel free to inquire anything (web service, contribution to databases etc.):
Nuclear Reaction Data Centre, Faculty of Science, Hokkaido University
060-0810 Sapporo, Japan
TEL +81(JPN)-11-706-3723 / FAX +81(JPN)-11-706-3724
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Last revision 2018-10-24 12:31xhtml::css

 services@jcprg.org



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Conversion of Upper Cases to Lower Cases



Conversion of Upper Cases to Lower Cases

SUBENT	40013001	19960810	4001300100001
BIB	8	26	4001300100002
INSTITUTE	(4RUSFEI)		4001300100003
REFERENCE	(J,YF,5,(1),129,6701)		4001300100004
	(J,SNP,5,89,6707)	ENGLISH OF YF 5 129	4001300100005
AUTHOR	(V.N.KONONOV)		4001300100006
TITLE	METHOD TO DETERMINE THE D-NEUTRON STRENGTH FUNCTIONS		4001300100007
	FOR EVEN-EVEN NUCLEI FROM RADIATION CAPTURE		4001300100008
	CROSS-SECTIONS		4001300100009
METHOD	A NEW METHOD FOR DETERMING OF THE D-NEUTRON STRENGTH		4001300100010
	FUNCTIONS FOR EVEN-EVEN NUCLEI RADIATION CAPTURE		4001300100011
	CROSS-SECTION WAS USED. A DROP DUE TO THE		4001300100012
	COMPETITION OF THE INELASTIC SCATTERING HAS BEEN		4001300100013
	OBSERVED IN CAPTURE SIGMA OF EVEN-EVEN NUCLEI.		4001300100014
	MEASURING OF MAGNITUDE OF THIS DECREASE GIVES THE		4001300100015
	PARTIAL SIGMA OF THE ORBITAL MOMENTUM L=2 NEUTRON		4001300100016
	CAPTURE AND THE CORRESPONDING NEUTRON STRENGTH		4001300100017
	FUNCTIONS		4001300100018

- It is mandatory to replace upper cases with upper+lower cases when we retransmit such old EXFOR entries.
- It is simple but boring job.



Two Automatic Conversion Approaches

Option 1

1. Convert all to *lower* cases.
2. Then reconvert all special cases (e.g., NAI → NaI)

Option 2 (my approach)

1. Convert all to *upper* cases.
2. Convert only known generic words to lower cases (e.g., CRYSTAL → crystal).



Automatic Conversion – Option 1

1. Convert ALL characters to *lower* cases,
2. then reconvert known strings by using *a special dictionary* (e.g., ev → eV)

Example

"3 INCH DIAM. ORTECH 3 INCH NAI(TL) CRYSTAL
FOR STANDARD RADIOACTIVITY OF CR-51"

→ "3 inch diam. ortech 3 inch nai(tl) crystal
for standard radioactivity of cr-51"

→ "3 inch diam. **ortech** 3 inch **NaI(Tl)** crystal
for standard radioactivity of **Cr-51**"

→ (manual correction)



Automatic Conversion – Option 2 (my approach)

1. Convert all to *upper* cases.
2. Convert only known generic words to lower cases (e.g., CRYSTAL → crystal) by using a **spell checker** (e.g., GNU ASPELL)

Example

“3 INCH DIAM. 3 INCH NAI (TL) CRYSTAL FOR STANDARD RADIOACTIVITY OF CR-51”

→ “3 inch **DIAM.** 3 inch **NAI (TL)** crystal for standard radioactivity of **CR-51**”

→ (manual correction)



Typos Highlighted after Conversion

METHOD	A NEW METHOD FOR DETERMING OF THE D-NEUTRON STRENGTH	4001300100010
	FUNCTIONS FOR EVEN-EVEN NUCLEI RADIATION CAPTURE	4001300100011
	CROSS-SECTION WAS USED. A DROP DUE TO THE	4001300100012
	COMPETITION OF THE INELASTIC SCATTERING HAS BEEN	4001300100013
	OBSERVED IN CAPTURE SIGMA OF EVEN-EVEN NUCLEI.	4001300100014
	MEASURING OF MAGNITUDE OF THIS DECREASE GIVES THE	4001300100015
	PARTIAL SIGMA OF THE ORBITAL MOMENTUM L=2 NEUTRON	4001300100016
	CAPTURE AND THE CORRESPONDING NEUTRON STRENGTH	4001300100017
	FUNCTIONS	4001300100018

METHOD	a new method for DETERMING of the D-neutron strength	4001300100010
	functions for even-even nuclei radiation capture	4001300100011
	cross-section was used. a drop due to the	4001300100012
	competition of the inelastic scattering has been	4001300100013
	observed in capture sigma of even-even nuclei.	4001300100014
	Measuring of magnitude of this decrease gives the	4001300100015
	partial sigma of the orbital momentum L=2 neutron	4001300100016
	capture and the corresponding neutron strength	4001300100017
	functions	4001300100018



Upper Cases to Lower Cases - How to use?

1. Submit your EXFOR source file at www.jcprg.org/exfor/tool/.

The screenshot shows the homepage of the Hokkaido University Nuclear Reaction Data Centre (JCPRG) EXFOR Compilation Tool. The header includes the JCPRG logo and navigation links for NRDF, EXFOR, CINDA, ENDF, English, Japanese, and Internal. The main content area features the title 'Hokkaido University Nuclear Reaction Data Centre (JCPRG) EXFOR Compilation Tool' and a description of the tool's capabilities. A file selection box is highlighted with a red border, showing '40013.txt' selected. Below the file box are 'submit' and 'reset' buttons. At the bottom, there is a note about extraction from a DOI or EXFOR code.

Hokkaido University Nuclear Reaction Data Centre (JCPRG)
EXFOR Compilation Tool

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Processing of a trans tape against chex, order, janis etc.

ファイルを選択 | 40013.txt
submit reset

Extraction of bibliography from a doi (e.g., 10.1016/j.nds.2014.07.065) or EXFOR code (e.g., J.NDS.120.272.2014)

2. Download the output from the link “**lowercase output**”.

The screenshot shows the output options for the EXFOR Compilation Tool. The options are listed in a numbered list from 1 to 8. Option 8, 'lowercase output (for processing of UPPER CASE entry only)', is highlighted with a red border. The other options are: 1. input, 2. order output, 3. chex output, 4. janis output, 5. X4+ output, 6. xtract output, 7. flag output (for altered entry only).

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- input
- order output
- chex output
- janis output
- X4+ output
- xtract output
- flag output
(for altered entry only)
- lowercase output
(for processing of UPPER CASE entry only)



Demonstration (EXFOR 40013.001)

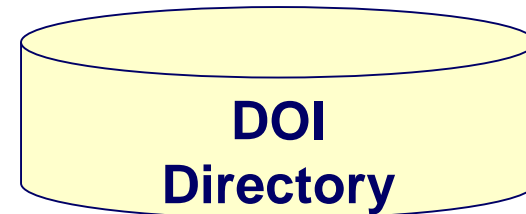
Automatic BIB Section Generation (TITLE, AUTHOR)

DOI and CrossRef

- Article's URL may change (e.g., bankruptcy of the publisher).
- DOI is a *permanent* link. The DOI Directory returns the valid URL for each DOI.
- CrossRef is a registration agency of DOI.



DOI (**permanent** link)
10.1016/j.nds.2014.07.065



URL (**may change** in the future)
<https://www.sciencedirect.com/science/article/abs/pii/S0090375214005171>

Bibliographies available from CrossRef

- **CrossRef** is also collecting and providing bibliographies (title, authors, volume, page etc.) compiled in XML by publishers.
- It should be possible to generate text under some BIB keywords (TITLE, AUTHORS etc) from the bibliography distributed from CrossRef.

An Example of XML File



Nuclear Instruments and Methods in
Physics Research Section A:
Accelerators, Spectrometers, Detectors
and Associated Equipment
Volume 888, 21 April 2018, Pages 31-43



is in Physics Research Section A: Accelerators, Spectrometers,
ment

is in Physics Research Section A: Accelerators, Spectrometers,
ment

02</issn>

The experimental nuclear reaction data
(EXFOR): Extended computer database and
Web retrieval system

V.V. Zerkin ^a, B. Pritychenko ^b

rint">

umbering>



TITLE

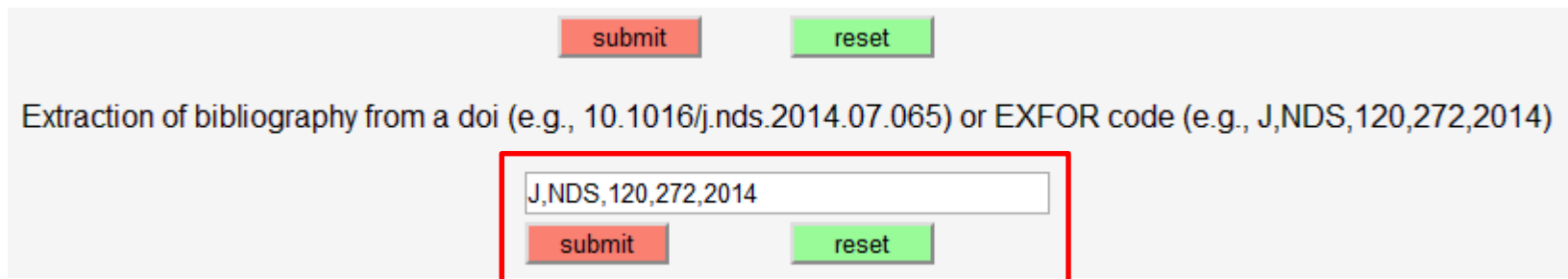
AUTHOR

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      The experimental nuclear reaction data (EXFOR): Extended computer database and Web
      retrieval system
    </title>
  </titles>
  ▼<contributors>
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      <surname>Zerkin</surname>
    </person_name>
    ▼<person_name sequence="additional" contributor_role="author">
      <given_name>B.</given_name>
      <surname>Pritychenko</surname>
    </person_name>
  </contributors>
</journal_article>
```



Automatic BIB Creation- How to use?

1. Submit REFERENCE code or DOI at www.jcprg.org/exfor/tool/.



submit reset

Extraction of bibliography from a doi (e.g., 10.1016/j.nds.2014.07.065) or EXFOR code (e.g., J,NDS,120,272,2014)

J,NDS,120,272,2014

submit reset

2. The system shows an EXFOR BIB draft.

```
page 1 of 1
doi = {10.1016/j.nds.2014.07.065}
}
EXFOR output =====
TITLE      Towards a More Complete and Accurate Experimental
           Nuclear Reaction Data Library (EXFOR): International
           Collaboration Between Nuclear Reaction Data Centres
           (NRDC)
AUTHOR     (N.Otuka, E.Dupont, V.Semkova, B.Pritychenko,
           A.I.Blokhin, M.Aikawa, S.Babykina, M.Bossant, G.Chen,
           S.Dunaeva, R.A.Forrest, T.Fukahori, N.Furutachi,
           S.Ganesan, Z.Ge, O.O.Gritzay, M.Herman, S.Hlavac,
           K.Kato, B.Lalremruata, Y.O.Lee, A.Makinaga,
           K.Matsumoto, M.Mikhaylyukova, G.Pikulina,
           V.G.Pronyaev, A.Saxena, O.Schwerer, S.P.Simakov,
           N.Soppera, R.Suzuki, S.Takacs, X.Tao, S.Taova,
           F.Tarkanyi, V.V.Varlamov, J.Wang, S.C.Yang, V.Zerkin,
           Y.Zhuang)
END
=====
Compare this output with the bibliography on the publisher's website.
```

Link to publisher's article website.



Demonstration (J,NDS,148,1,2018)

Summary

- Web tools are now available for (1) conversion of upper to lower cases, and (2) automatic BIB section creation.
- It cannot process a very large file (*time-out*).
- I will further upgrade this tool (only) if I receive requests from compilers.

