International Atomic Energy Agency

Updates of EXFOR Compilation Web Tool

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IAEA Nuclear Data Section

EXFOR Workshop 2018
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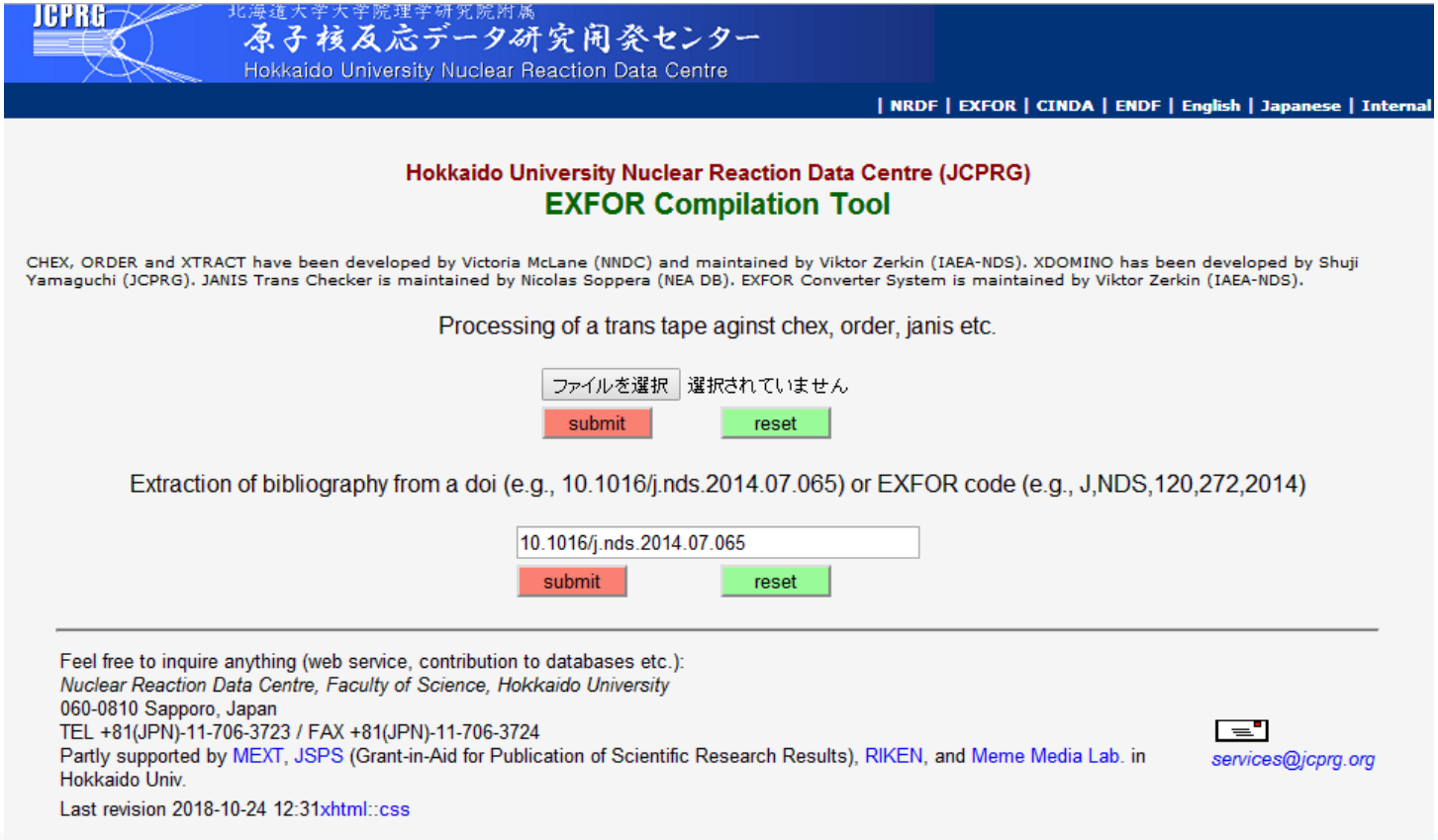
Web Tool on JCPRG Server

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



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1. Conversion of upper cases to lower cases
2. Automatic BIB section generation (TITLE, AUTHOR)

Conversion of Upper Cases to Lower Cases

Conversion of Upper Cases to Lower Cases

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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)

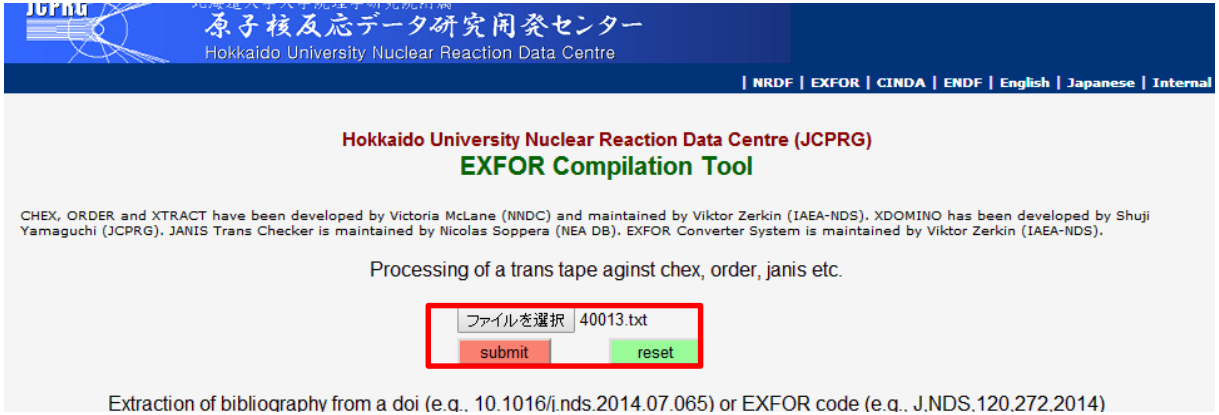
Typos Highlighted after Conversion

```
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

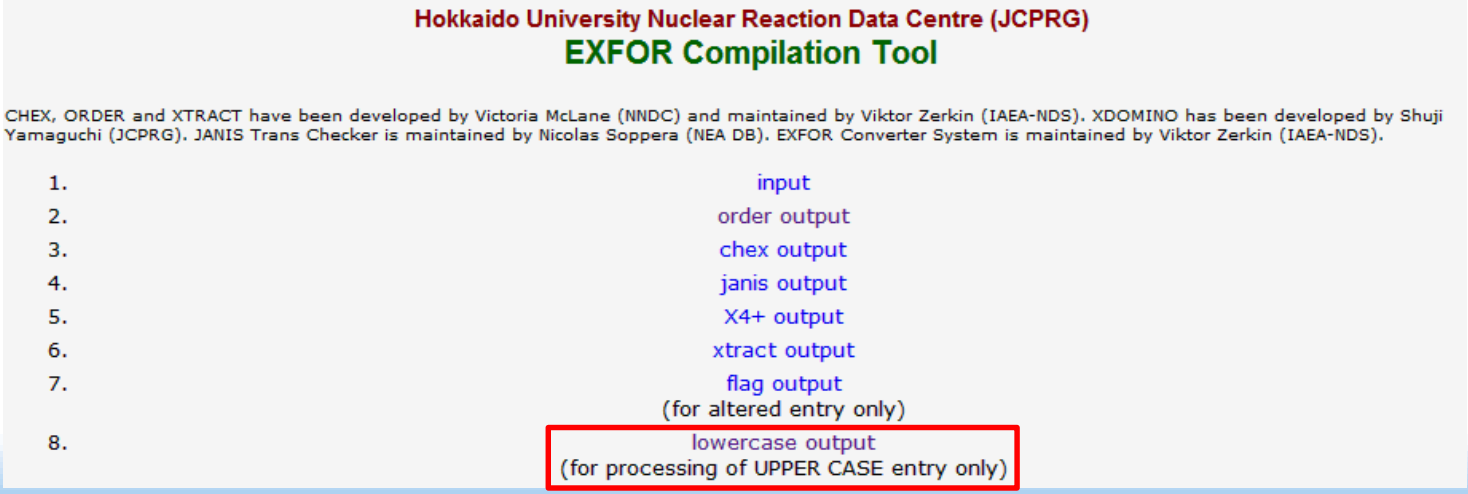
METHOD      a new method for DETERMING of the D-neutron strength   4001300100010
            functions for even-even nuclei radiation capture       4001300100011
            cross-section was used.  a drop due to the             4001300100012
            competition of the inelastic scattering has been       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/.



2. Download the output from the link "lowercase output".



Demonstration (EXFOR 40013.001)

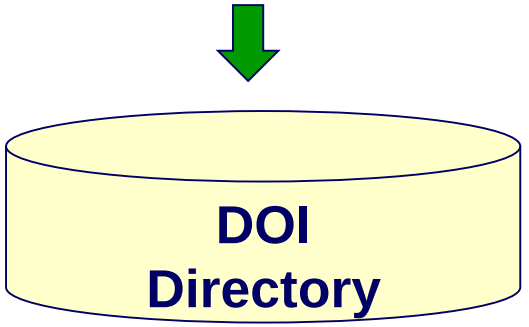
Automatic BIB Section Generation (TITLE, AUTHOR)

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.

Crossref

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



URL (**may change** in the future)
https://www.sciencedirect.com/science/article/abs/pii/S009037521400517 1

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

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

V.V. Zerkin [a], B. Pritychenko [b]

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     <surname>Zerkin</surname>
   </person_name>
  ▼<person_name sequence="additional" contributor_role="author">
     <given_name>B.</given_name>
     <surname>Pritychenko</surname>
```
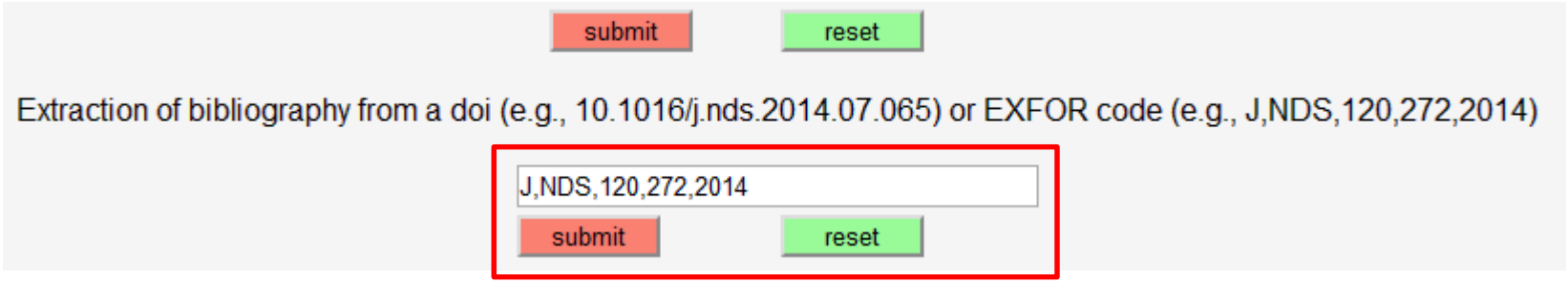

TITLE

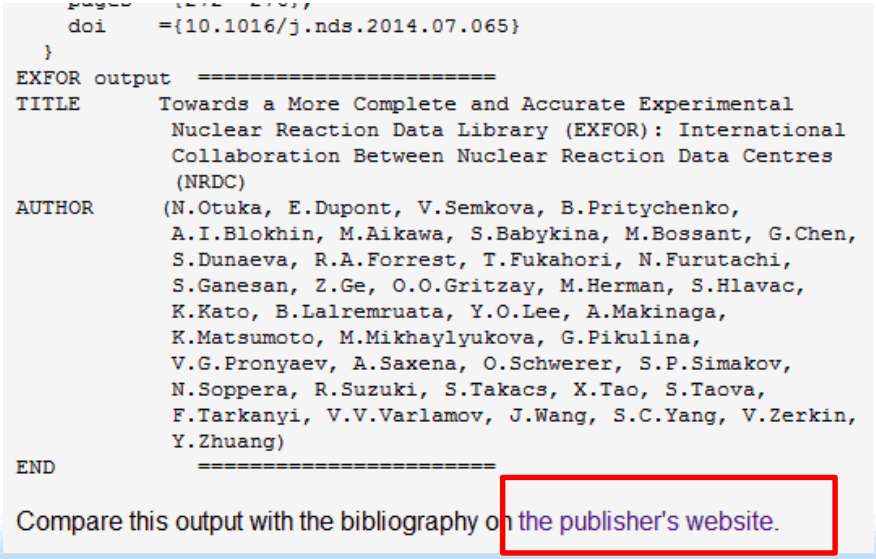
AUTHOR

Automatic BIB Creation- How to use?

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



2. The system shows an EXFOR BIB draft.



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.