EXFOR-NSR PDF database

Viktor Zerkin

International Atomic Energy Agency, Nuclear Data Section
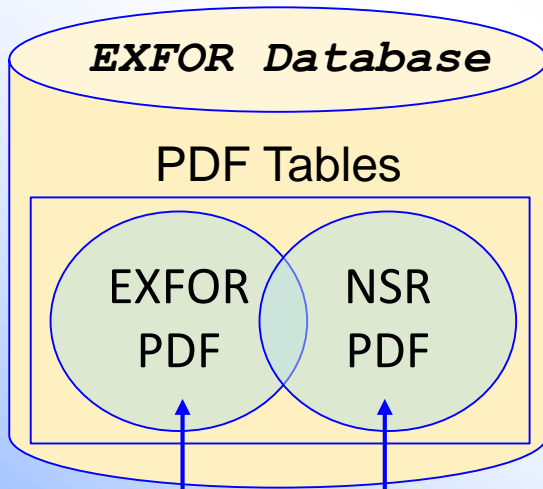
EXFOR Workshop, 22 - 25 October 2018, Vienna, Austria

History

- 2005, "Central storage of EXFOR source papers", NRDC-WP2005-14
- 2005, EXFOR source papers are systematically stored in the IAEA-NDS PDF archive
- 2011, PDF files are included to EXFOR database (common between NNDC and NDS)
- 2011, EXFOR Web retrieval system provided access to PDF files for authorized users on NNDC and NDS Web sites
- 2012, PDF of original papers of NSR are exchanged between NNDC and NDS, and shared between NSR and EXFOR systems
- 2015, ENSDF evaluators donated their PDF collections to common database: A.Rodionov, G.Shulyak, B.Singh, G.Audi, F.Kondev
- 2015, NSR Web retrieval system provided access to PDF files for authorized users
- 2016, PNPI joined regular exchange of PDF files between NNDC and NDS
- 2016, CINDA Web retrieval system provided access to PDF files for authorized users
- 2016, IAEA-INDC reports are publically opened via Web EXFOR and NSR

Status-2018

- Content: 194,048 PDF files from 2000 to 2018 (19 years)
  NSR: 164,133/229,505 (72%),   EXFOR: 23,111/31,688 (73%)
- Web access via: EXFOR, NSR, CINDA, MyEnsdf, MyExfor, etc.

PDF files in the database, naming convention and location in directory structure

EXFOR Database

PDF Tables

EXFOR PDF   NSR PDF

Operations:
- upload files to db
- save from db to files
- backup/restore
- online display
- transfer center-center

Protection:
- encryption
- authorization
- access permissions
- copyright
- open groups of publications:
  IAEA INDC Reports

Access permissions:

PDF file	User
open: 0	0: any
authorized: 1	1: NRDC/NSDD/CRP
staff only: 2	2: NDS, NNDC

`nsr/`
`1988/1988FR23.pdf`

`x4pub/`
`1974/J,NIM,115,345,1974.pdf`
`1975/C,75KIEV,2,53,1975.pdf`
`1972/R,ORNL-4823,1972.pdf`
`1962/T,HOWER,1962.pdf`
`1958/W,NEWSON,1958.pdf`

Files naming convension:
`.../nsr/year/nsrKeyno*.pdf`
`.../x4pub/year/stdFileName.pdf`

Coding and checking EXFOR Reference-codes

by V.Zerkin, IAEA-NDS, 2012-2017 (ver.2017-06-02)

Forming stdFileName

Tools for EXFOR compilers helping to form reference-code from its parameters,
to search the reference in EXFOR and CINDA databases, to store of PDF file

Reference parameters:

Type	Code	Volume	Issue	Page	Year	Month
J »	NP »	22 »	»	640 »	1961 »	»

Convert parameters to code ⇓   Convert code to parameters ⇑

REFERENCE: `J,NP,22,640,196102`

Reference parameters:

Type	Name	Year	Month
T »	»	1961 »	»

Check Reference-code and search the Reference in the databases ⇓

Reference parameters:

Type	Code	Number	Page	Year
R »	NP »	»	640 »	1961 »

x4Reference	J,NP,22,640,196102
stdFileName	J,NP,22,640,1961
Reference	Jour: Nuclear Physics, Vol.22, p.640 (1961)
Country	Netherlands
PDF file	X:\x4pdf\1961\J,NP,22,640,1961.pdf
BibTex file	X:\x4pdf\1961\J,NP,22,640,1961.bibtex
NSR PDF file	X:\x4pdf\..\nsr\1961\1961BO06.pdf
PDF file on X:	X:\x4pdf\1961\NP_22_640_1961.pdf
PDF in db	J,NP,22,640,1961.pdf
DOI	10.1016/0029-5582(61)90474-6
Web	
Type	J
Ref.	J,NP
Volume	22
Issue	
Number	
Name	
Page	640
Year	1961
Title	Neutron Total Cross-Sections in the Energy Range 15 to 120 MeV
Authors	P.H.Bowen, J.P.Scanlon, G.H.Stafford, J.J.Thresher, P.E.Hodgson
EXFOR	21103:1
CINDA	53811 (8 lines)
NSR	1961BO06

X4/Ref-Code - Mozilla Firefox

🔒 https://www-nds.iaea.org/exfor/helppref/hlpJournal.htm

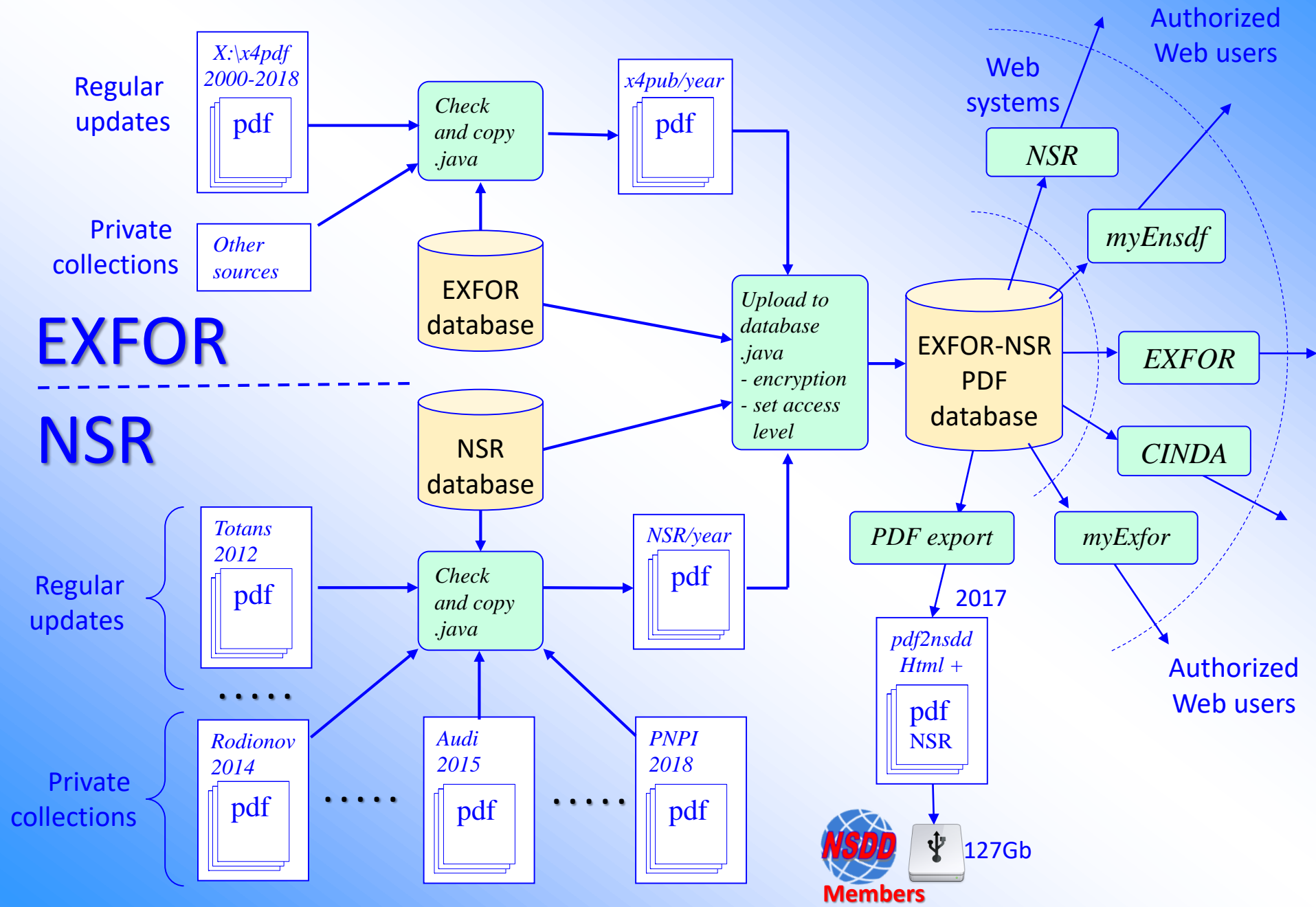| 286)	TRA	NET	Nuclear Engineering and Technology	Korea,
287)	TRA	NF	Nuclear Fusion (IAEA)	France
288)	EXT	NIM	Nuclear Instrum.and Methods in Physics Res.	Netherla
289)	TRA	NIM/A	Nucl. Instrum. Methods in Physics Res., Sect.A	Netherla
290)	TRA	NIM/B	Nucl. Instrum. Methods in Physics Res., Sect.B	Netherla
291)	TRA	NIN	Nuclear India	India
292)	TRA	NKA	Nukleonika	Poland
293)	TRA	NKK	Nippon Kagaku Kaishi	Japan
294)	TRA	NKN	Nukleon	Czechos
295)	TRA	NM	Nuklearmedizin	German
296)	TRA	NMB	Int. Journal of Nuclear Medicine and Biology	UK
297)	EXT	NP	Nuclear Physics	Netherla
298)	TRA	NP/A	Nuclear Physics, Section A	Netherla
299)	TRA	NP/B	Nuclear Physics, Section B	Netherla
300)	EXT	NPW	Nuclear Power	UK
301)	TRA	NRP	Journal of Nuclear and Radiation Physics	Egypt
302)	TRA	NSA	Nuclear Science Abstracts	USA
303)	TRA	NSB	Nuclear Science and Applications (Dhaka)	Banglad

NP ⌃ ⌄ Highlight All Match Case 3 of 5 matches

Functioning of EXFOR-NSR PDF database

Contents of EXFOR-NSR PDF database as of 2018-10-18

EXFOR-NSR PDF database.

Database updated: 2018-10-18. Files: 194048 from 2000-04-19 to 2018-10-18.

-	-	-	-	-	1896:3	-	1898:4	1899:1	-	[1891-1899]:8
1901:1	1902:1	1903:4	1904:3	1905:2	1906:2	1907:3	1908:2	1909:1	1910:3	[1901-1910]:22
1911:2	1912:1	1913:2	-	-	-	1917:4	1918:2	1919:3	1920:3	[1911-1920]:17
1921:3	1922:4	1923:3	1924:5	1925:2	-	1927:3	1928:11	1929:8	1930:10	[1921-1930]:49
1931:18	1932:22	1933:27	1934:41	1935:48	1936:34	1937:47	1938:44	1939:73	1940:65	[1931-1940]:419
1941:51	1942:25	1943:25	1944:26	1945:25	1946:83	1947:170	1948:178	1949:333	1950:464	[1941-1950]:1380
1951:483	1952:459	1953:569	1954:653	1955:768	1956:817	1957:829	1958:1142	1959:1079	1960:1327	[1951-1960]:8126
1961:1397	1962:1485	1963:1813	1964:1597	1965:1836	1966:2061	1967:2228	1968:2411	1969:2650	1970:3155	[1961-1970]:20633
1971:3504	1972:3879	1973:3990	1974:3556	1975:3082	1976:3127	1977:2972	1978:2937	1979:3212	1980:3051	[1971-1980]:33310
1981:2978	1982:3217	1983:3260	1984:3252	1985:2916	1986:2972	1987:3130	1988:2986	1989:3146	1990:3171	[1981-1990]:31028
1991:2753	1992:2940	1993:3082	1994:4102	1995:3925	1996:3909	1997:3772	1998:4021	1999:4198	2000:4176	[1991-2000]:36878
2001:4478	2002:4771	2003:3692	2004:3939	2005:4160	2006:3481	2007:4039	2008:3142	2009:2912	2010:2761	[2001-2010]:37375
2011:3153	2012:2824	2013:3448	2014:3627	2015:3036	2016:3391	2017:3471	2018:1853			[2011-2018]:24803

Years: 117   Publications: 194048

PDF Statistics:

DB	#PDF/#References	#PDF+	Total #PDF	Todo #PDF
NSR:	164133/229505 ~72%	+590 from EXFOR	164723	64782
EXFOR:	23111/31688 ~73%	+981 from NSR	24092	7596

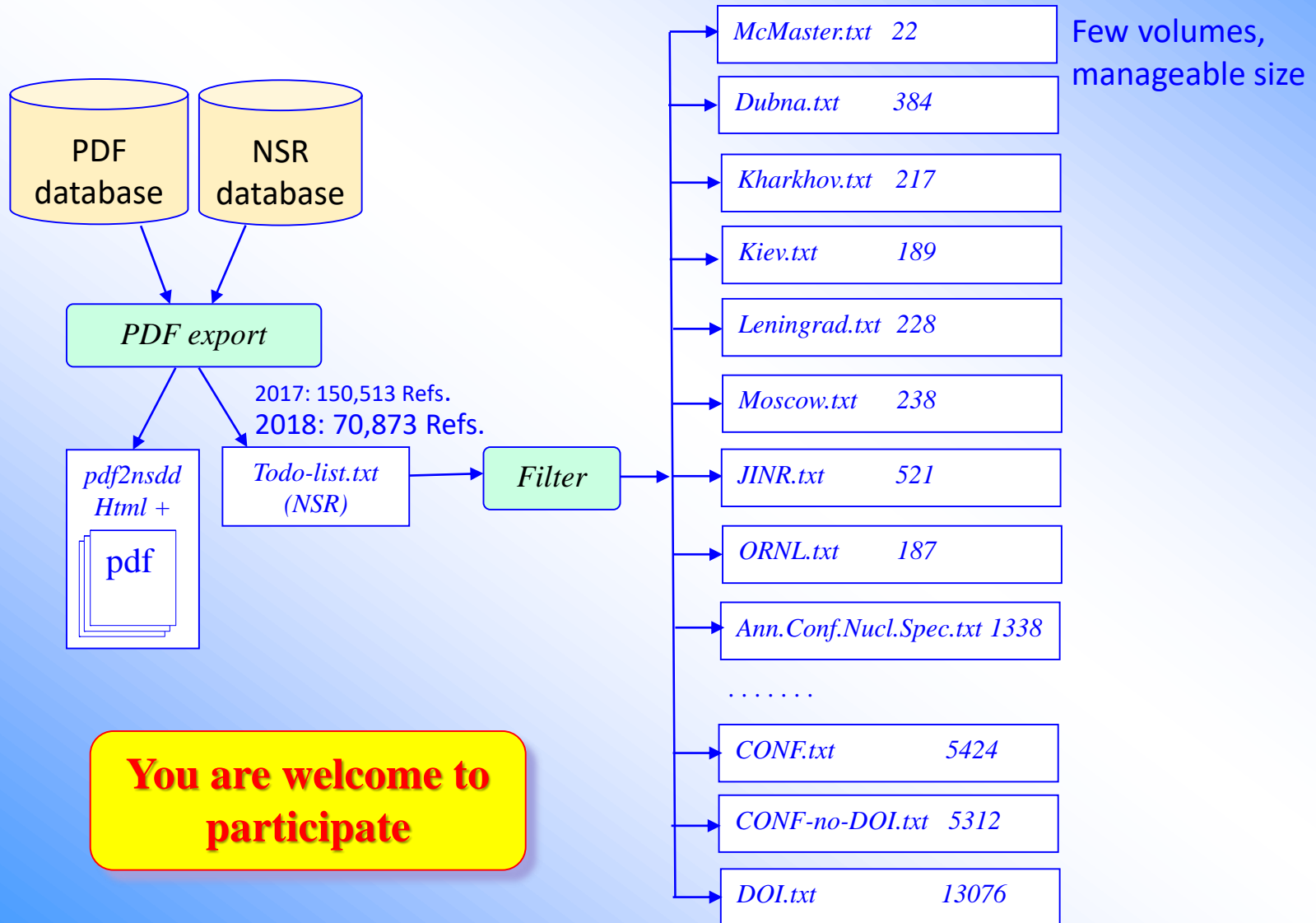# Contributions to NSR PDF database as of 2018-10-18

Contributions:

1)	201200_Totans	/3470/	24)	201802_PNPI	/4490/
2)	201300_Totans	/971/	25)	201802_Totans	/193/
3)	201400_Totans	/535/	26)	201803_Balraj	/1/
4)	201500_Totans	/599/	27)	201803_PNPI	/5105/
5)	201504_Dimitriou	/12/	28)	201803_Pritychenko_RD	/532/
6)	201510_Balraj	/257/	29)	201804_PNPI	/6018/
7)	201510_Rodionov	/2216/	30)	201804_Totans	/268/
8)	201512_Audi	/2586/	31)	201804_Zerkin_JINR	/603/
9)	201600_Totans	/2019/	32)	201804_Zerkin_ORNL	/11/
10)	201603_Rodionov	/194/	33)	201805_PNPI	/2302/
11)	201603_Shulyak	/13021/	34)	201805_Zerkin_X4	/119/
12)	201604_Kondev	/1079/	35)	201806_PNPI	/5540/
13)	201611_PNPI	/31554/	36)	201807_PNPI	/6158/
14)	201700_PNPI	/50717/	37)	201807_Totans	/94/
15)	201700_Totans	/2333/	38)	20180905_Totans	/197/
16)	201700_Zerkin	/630/	39)	20180906_PNPI	/1987/
17)	201703_Shulyak	/302/	40)	20180920_PNPI	/1489/
18)	201705_Kondev	/44/	41)	20180924_Totans	/67/
19)	201709_Pritychenko	/1196/	42)	201809_Zerkin_JINR	/67/
20)	201711_Zerkin	/939/	43)	20181003_PNPI	/3092/
21)	201800_Pritychenko	/60/	44)	20181005_Totans	/30/
22)	201800_Zerkin	/162/	45)	20181010_PNPI	/1902/
23)	201801_PNPI	/8975/	46)	201810_Zerkin_KINR	/50/

Sum: /164186/

Contributors:

1	PNPI	129329	78.8%
2	Shulyak	13323	8.11%
3	Totans	10776	6.56%
4	Audi	2586	1.58%
5	Zerkin	2581	1.57%
6	Rodionov	2410	1.47%
7	Pritychenko	1788	1.09%
8	Kondev	1123	0.68%
9	Balraj	258	0.16%
10	Dimitriou	12	0.01%
	Total	164186	100%

Thanks to all contributors!!!

Mini projects to extend NSR PDF database

PDF database

NSR database

PDF export

2017: 150,513 Refs.
2018: 70,873 Refs.

pdf2nsdd Html +

pdf

Todo-list.txt (NSR)

Filter

You are welcome to participate

McMaster.txt   22

Dubna.txt   384

Kharkhov.txt   217

Kiev.txt   189

Leningrad.txt 228

Moscow.txt   238

JINR.txt   521

ORNL.txt   187

Ann.Conf.Nucl.Spec.txt 1338

. . . .

CONF.txt   5424

CONF-no-DOI.txt   5312

DOI.txt   13076

Few volumes, manageable size

Example of mini-project

Todo-2018-09-25: McMaster.txt

```
1957WI49 THES Thesis, McMaster University (1957) A1=I.R.Williams
1979BUZA REPT McMaster Univ., Ann.Rept., p.51 (1979) A1=D.G.Burke
1985JAZY REPT McMaster Univ., Ann.Rept., p.62 (1985) A1=V.P.Janzen
1985KAZR REPT McMaster Univ., Ann.Rept., p.97 (1985) A1=G.Kajrys
1985TRZZ REPT McMaster Univ., Ann.Rept., p.12 (1985) A1=A.J.Trudel
1986BAZE REPT McMaster Univ., Ann.Rept., p.7 (1986) A1=C.Bamber
1986CHZJ REPT McMaster Univ., Ann.Rept., p.40 (1986) A1=A.Chbihi
1986DIZW REPT McMaster Univ., Ann.Rept., p.15 (1986) A1=G.U.Din
1986DIZX REPT McMaster Univ., Ann.Rept., p.12 (1986) A1=G.U.Din
1986JAZS REPT McMaster Univ., Ann.Rept., p.20 (1986) A1=V.P.Janzen
1986KAZW REPT McMaster Univ., Ann.,Rept., p.34 (1986) A1=G.Kajrys
1986PIZU REPT McMaster Univ., Ann.Rept., p.26 (1986) A1=S.Pilotte
1986POZS REPT McMaster Univ., Ann.Rept., p.26 (1986) A1=D.G.Popescu
1986POZT REPT McMaster Univ., Ann.Rept., p.22 (1986) A1=D.G.Popescu
1986RAZO REPT McMaster Univ., Ann.Rept., p.31 (1986) A1=D.D.Rajnauth
1986SIZU REPT McMaster Univ., Ann.Rept., p.101 (1986) A1=J.J.Simpson
1986SIZV REPT McMaster Univ., Ann.Rept., p.18 (1986) A1=B.Singh
1986SZZY REPT McMaster Univ., Ann.Rept., p.47 (1986) A1=J.Szucs-Ashbaugh
1986SZZZ REPT McMaster Univ., Ann.Rept., p.13 (1986) A1=J.Sziklai
1986TRZY REPT McMaster Univ., Ann.Rept., p.1 (1986) A1=A.J.Trudel
1986VIZZ REPT McMaster Univ., Ann.Rept., p.19 (1986) A1=D.A.Viggars
1986WAZR REPT McMaster Univ., Ann.Rept., p.24 (1986) A1=J.C.Waddington
```

22 NSR Entries in 4 volumes: 1 thesis and 3 annual reports
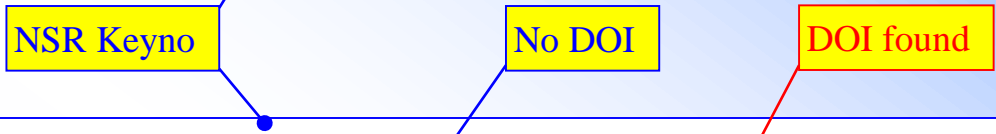
DOI's from external sources

Retrieving DOI's from crossref.org

NSR request: 49763 Refs.

```
H:email=v.zerkin@iaea.org;format=piped
|J C.R.Physique|BECQUEREL|122||420|1896||1896BE01|
|J Phil.Mag.|RUTHERFORD|47||109|1899||1899RU01|
```

NSR Keyno   No DOI   DOI found

Output: 19014 found (38%)

```
|J C R Physique|BECQUEREL|122||420|1896||1896BE01|
1941-5982,1941-5990|Philosophical Magazine Series\
5|Rutherford|47|284|109|1899|full_text|1899RU01|10.1080/14786449908621245
```

2018:	doi requested,	found
NSR	49,763	19,014 (38%)
EXFOR	4,574	1,244 (27%)
CINDA	15,947	6,561 (41%)

"Soft" DOI's are now used as supplement for databases and software, e.g. for find PDF's. Implemented in EXFOR, NSR, CINDA.

Option: to add these DOI's to exchange entries (?)

Concluding remarks

1. EXFOR-NSR PDF database is steadily growing

2. PDF files from the database are available for <u>authorized users</u> via Web retrieval systems: EXFOR, NSR, CINDA

3. Authorized users: compilers and evaluators - members of NRDC, NSDD and IAEA-CRPs; NDS and NNDC staff

4. Public access is currently opened only for INDC Reports

5. Efforts to increase public accessibility are ongoing but with difficulties

Thank you.