NUCLEAR SCIENCE REFERENCES

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1 NNDC, Brookhaven National Laboratory, Upton, NY 11973-5000, USA

2 Institute of Physics, Slovak Academy of Sciences, 84511, Bratislava, Slovakia

3 NDS, International Atomic Energy Agency, Vienna International Centre, P.O. Box 100, A-1400 Vienna, Austria

4 Department of Physics & Astronomy, McMaster University, Hamilton, Ontario L8S 4M1, Canada

BROOKHAVEN NATIONAL LABORATORY

a passion for discovery

U.S. DEPARTMENT OF ENERGY | Office of Science

NSR

- NSR is a collaborative project within USNDP
- Three centers contributed to NSR on the regular basis
- Unfortunately, IAEA stopped contributing to NSR
- Workload was redistributed between NNDC & Bratislava, our resources are stretched
- Overall database management is performed by NNDC

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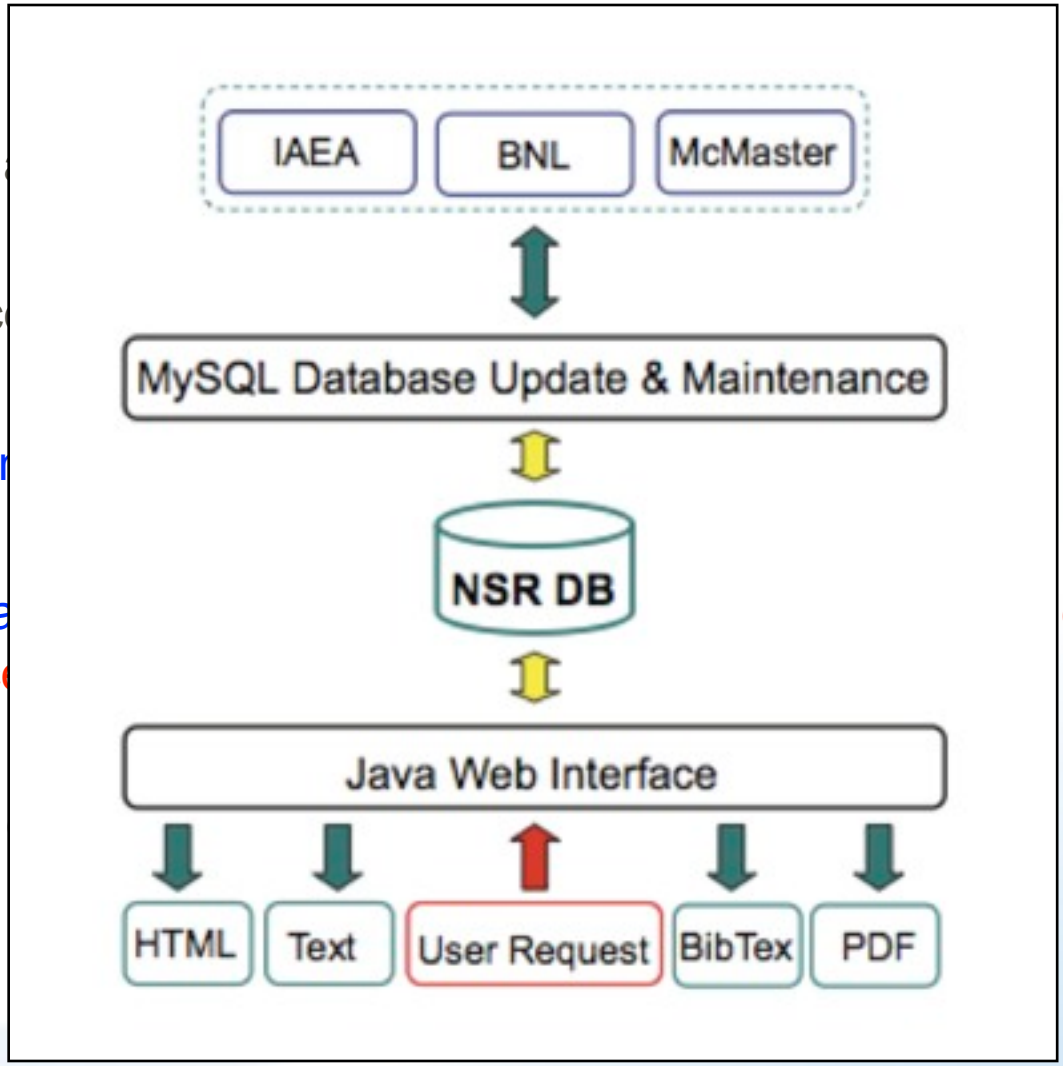

STATISTICS

As of January 2011:

- 201,848 Journal articles, proceedings, reports, ...
- 473 Journals
- 86,837 Authors
- 5,002 Nuclides
- Web usage statistics growth and wide variety of retrievals

STATISTICS

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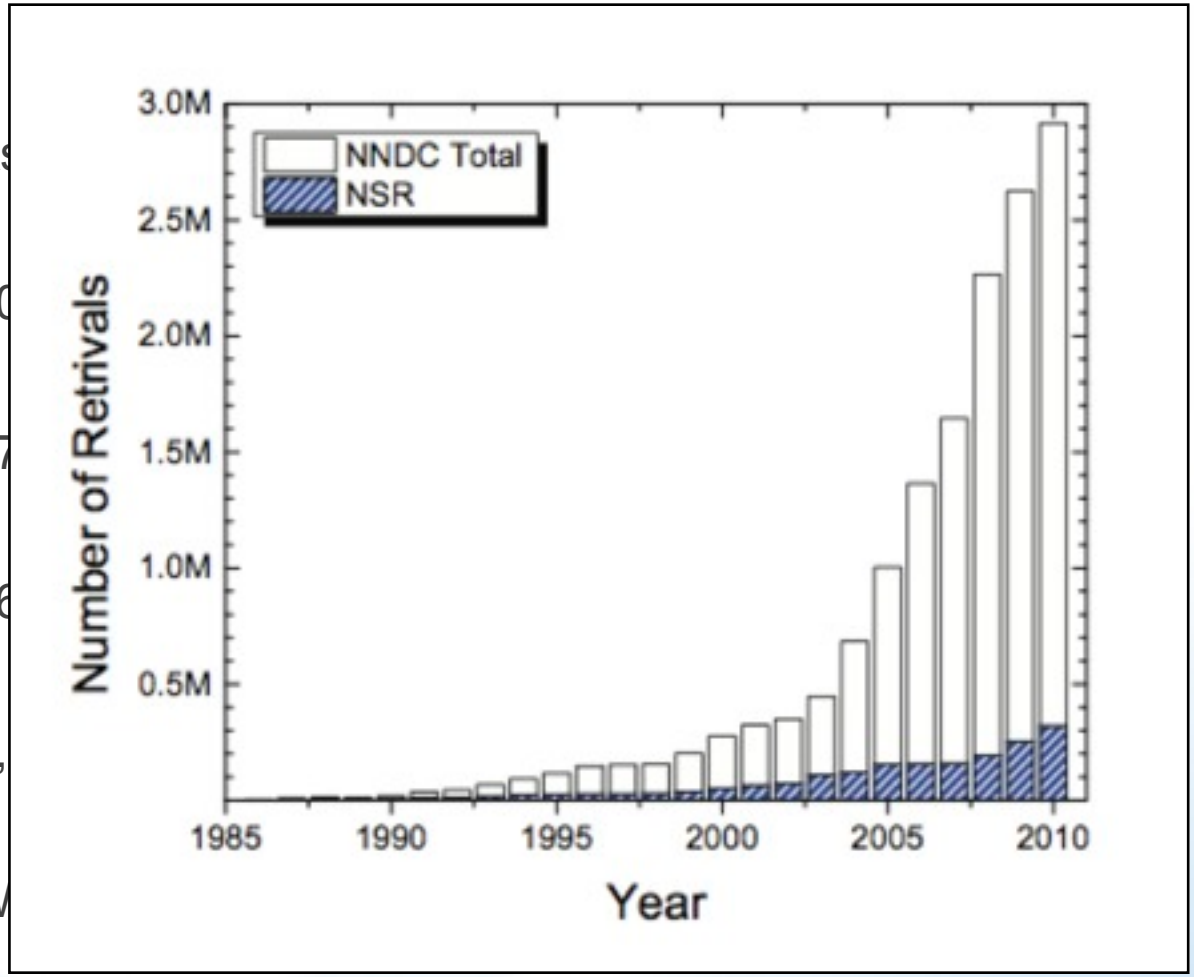

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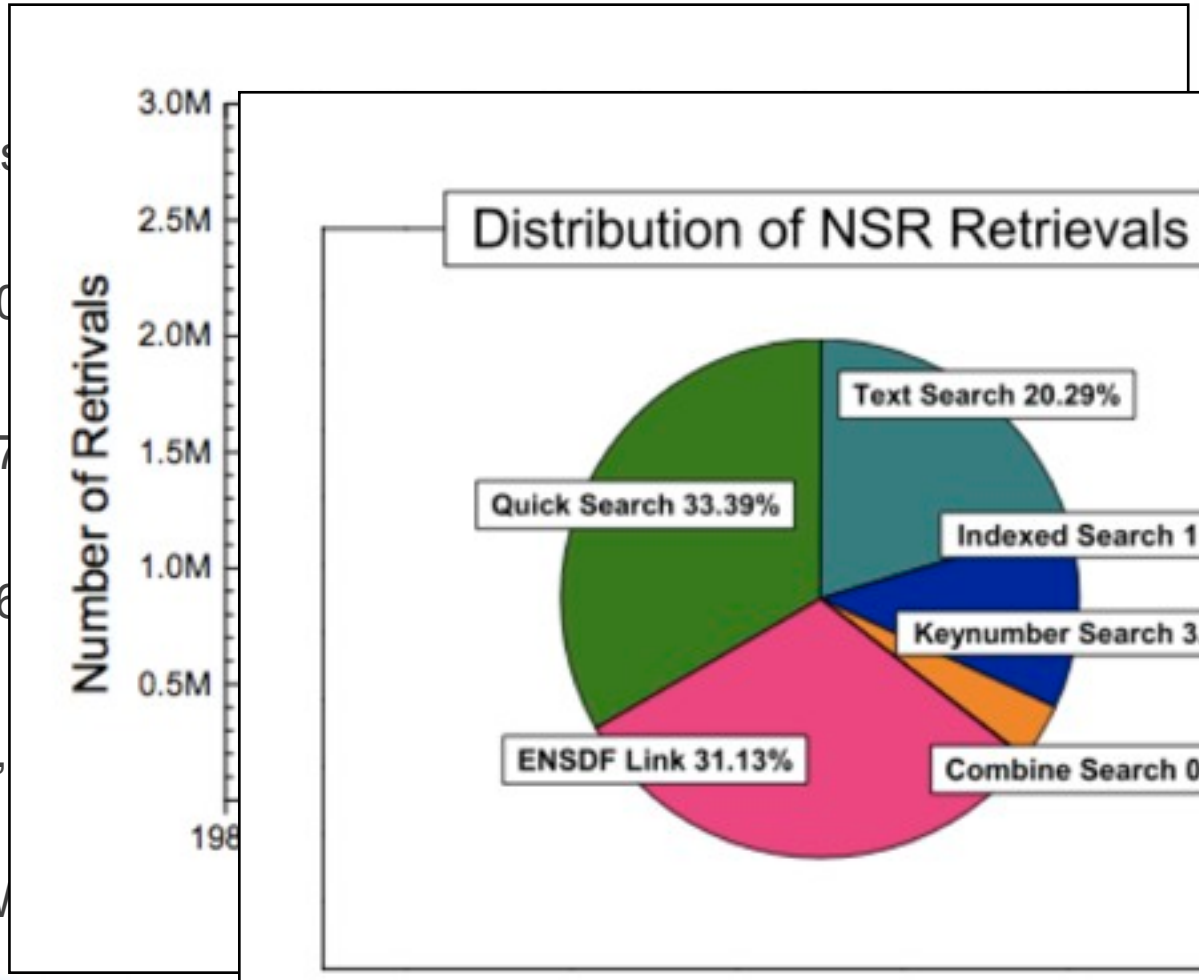

NSR OPERATION IN 2011

- Total number of NSR entries in FY 2011 is 3,802 compare with 3,818 in FY 2010
- Total number of keyworded articles is 2,191
- Total number of NSR corrections (quality assurance, Cn) is 340
- Total number of NSR updates in FY 2011 is 102
- Total number of NSR entries as of 11/11/2011 is 204,969;
- NSR was distributed to Vienna and Berkeley, 4 issues of Recent Refs
- Hardware challenges: Do we really need Recent References? <100 ret/month

XSB, INC.

- The pilot 50K project with XSB, Inc has been completed
- It provides tentative keywords and templates for PRC and Nuclear Physics A, this already helped Joann enormously
- Unfortunately pilot keywords are not great
- Further improvements have been discussed with XSB, Inc.
- Additional comments from Balraj ....

EXFOR INTEGRATION

- EXFOR Web integration was performed to engage nuclear reaction community and extend NSR user base
- American Physical Society is interested

EXFOR INTEGRATION

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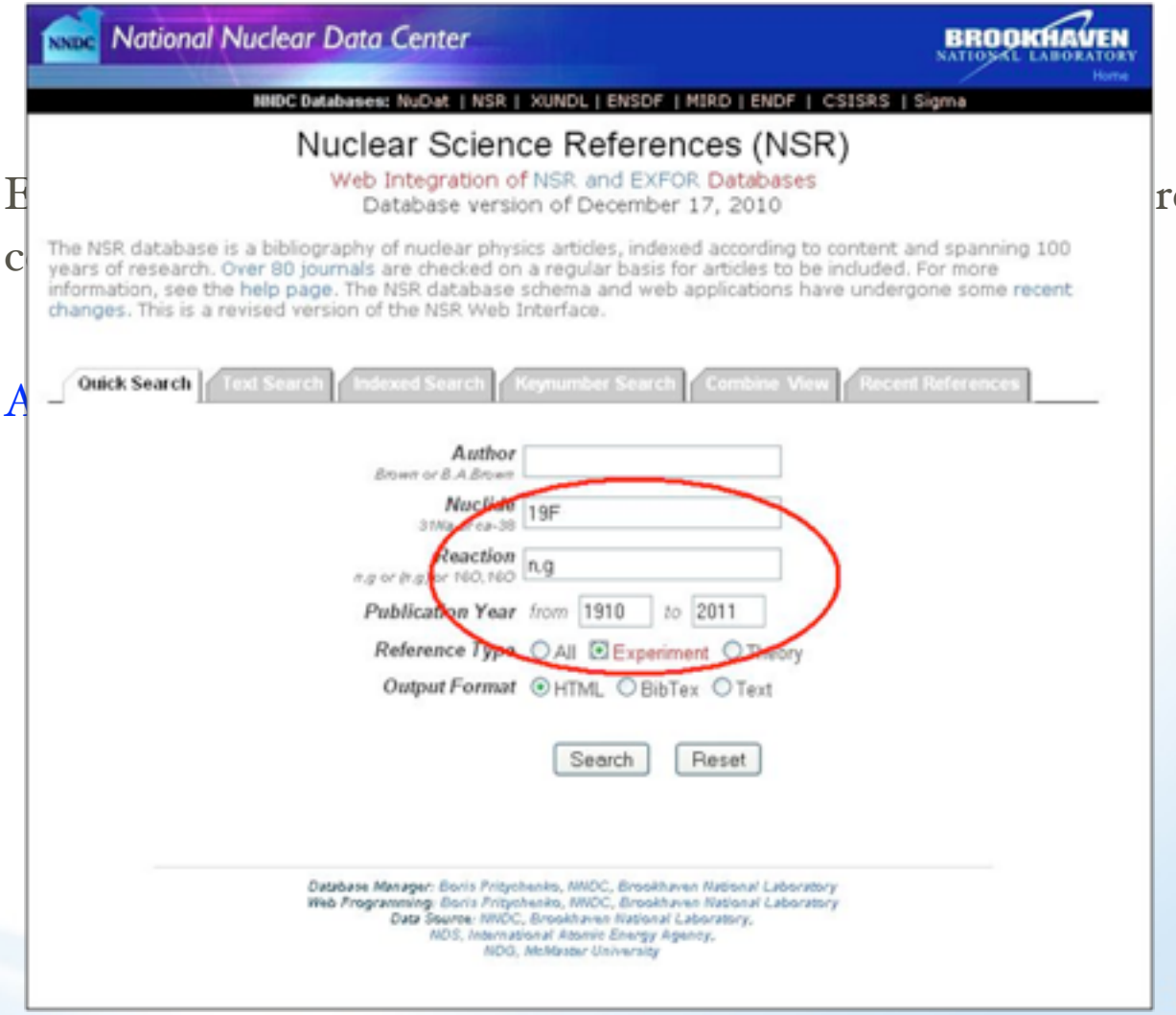

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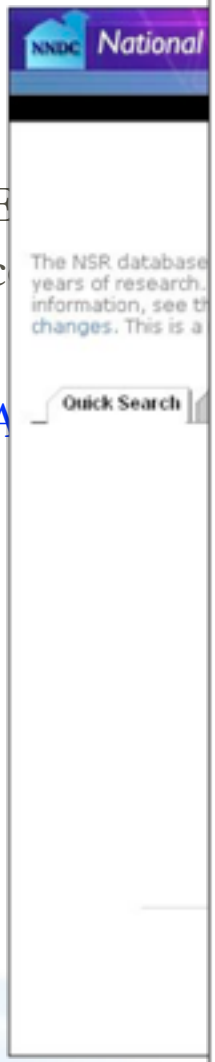

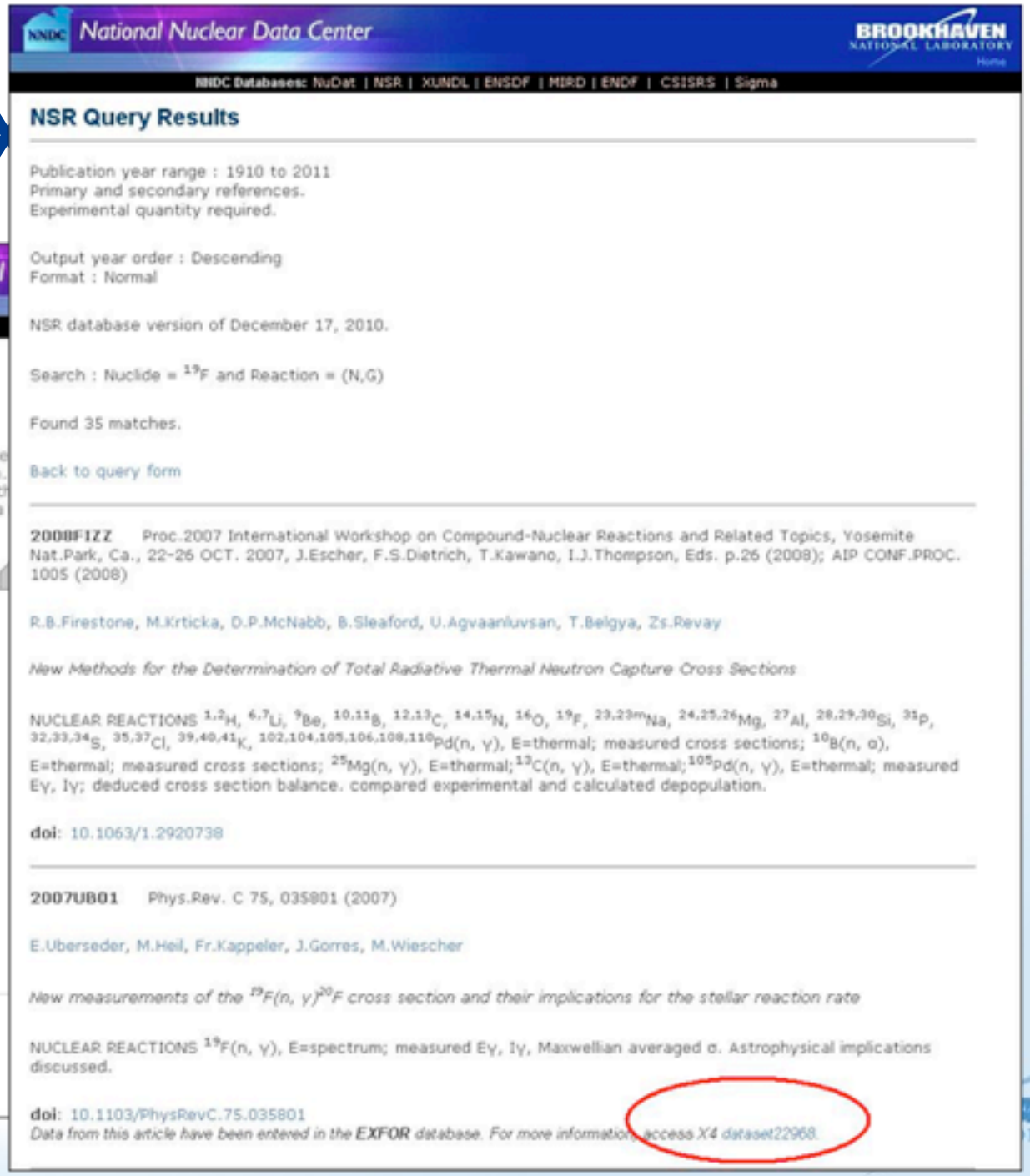

National Nuclear Data Center

BROOKHAVEN NATIONAL LABORATORY

NNDC Databases: NuDat | NSR | XUNDL | ENSDF | MIRD | ENDF | CSISRS | Sigma

NSR Query Results

Publication year range : 1910 to 2011
Primary and secondary references.
Experimental quantity required.

Output year order : Descending
Format : Normal

NSR database version of December 17, 2010.

Search : Nuclide = ^{19}F and Reaction = (N,G)

Found 35 matches.

Back to query form

2008FIZZ Proc.2007 International Workshop on Compound-Nuclear Reactions and Related Topics, Yosemite Nat.Park, Ca., 22-26 OCT. 2007, J.Escher, F.S.Dietrich, T.Kawano, I.J.Thompson, Eds. p.26 (2008); AIP CONF.PROC. 1005 (2008)

R.B.Firestone, M.Krticka, D.P.McNabb, B.Sleaford, U.Agvaanluvsan, T.Belgya, Zs.Revay

New Methods for the Determination of Total Radiative Thermal Neutron Capture Cross Sections

NUCLEAR REACTIONS ^{1,2}H, ^{6,7}Li, ^{9}Be, ^{10,11}B, ^{12,13}C, ^{14,15}N, ^{16}O, ^{19}F, ^{23,23m}Na, ^{24,25,26}Mg, ^{27}Al, ^{28,29,30}Si, ^{31}P, ^{32,33,34}S, ^{35,37}Cl, ^{39,40,41}K, ^{102,104,105,106,108,110}Pd(n, γ), E=thermal; measured cross sections; ^{10}B(n, α), E=thermal; measured cross sections; ^{25}Mg(n, γ), E=thermal; ^{13}C(n, γ), E=thermal; ^{105}Pd(n, γ), E=thermal; measured Eγ, Iγ; deduced cross section balance. compared experimental and calculated depopulation.

doi: 10.1063/1.2920738

2007UB01 Phys.Rev. C 75, 035801 (2007)

E.Uberseder, M.Heil, Fr.Kappeler, J.Gorres, M.Wiescher

New measurements of the ^{19}F(n, γ)^{20}F cross section and their implications for the stellar reaction rate

NUCLEAR REACTIONS ^{19}F(n, γ), E=spectrum; measured Eγ, Iγ, Maxwellian averaged σ. Astrophysical implications discussed.

doi: 10.1103/PhysRevC.75.035801
*Data from this article have been entered in the **EXFOR** database. For more information, access X4 dataset22968.*

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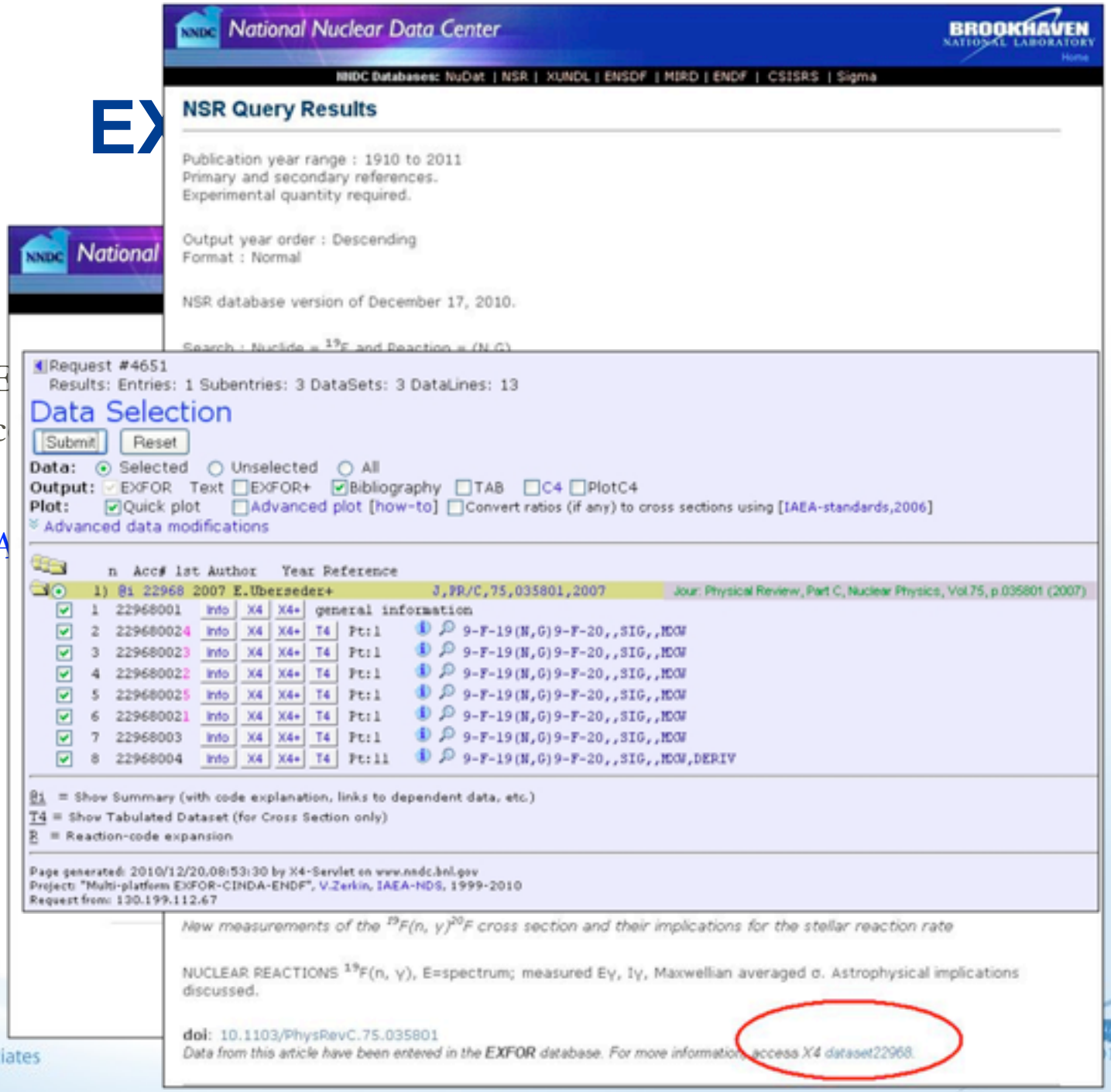

National Nuclear Data Center
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NNDC Databases: NuDat | NSR | XUNDL | ENSDF | MIRD | ENDF | CSISRS | Sigma
NSR Query Results
Publication year range : 1910 to 2011
Primary and secondary references.
Experimental quantity required.
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Request #4651
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Data Selection
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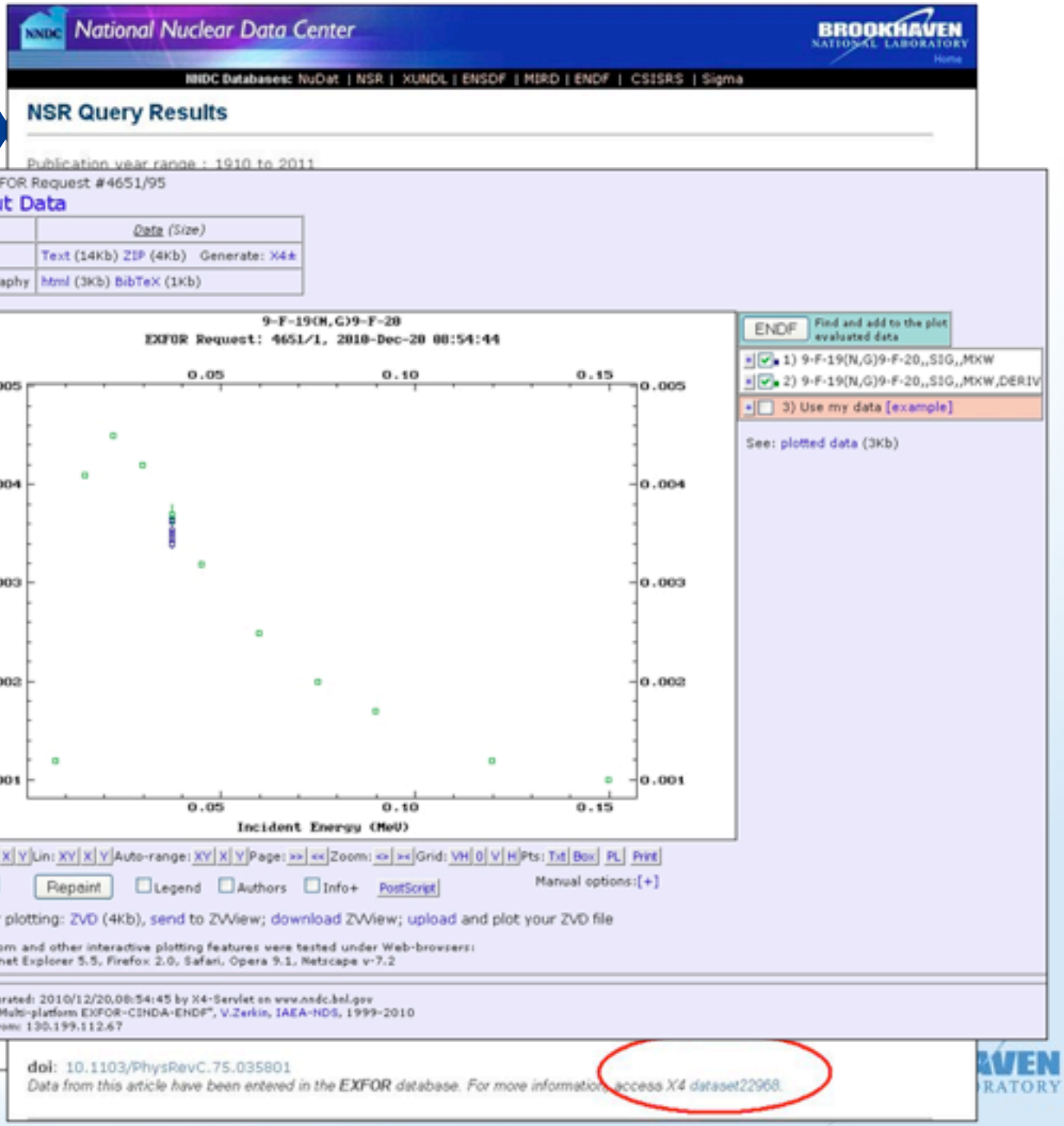
Output: EXFOR Text EXFOR+ Bibliography TAB C4 PlotC4
Plot: Quick plot Advanced plot [how-to] Convert ratios (if any) to cross sections using [IAEA-standards,2006]
Advanced data modifications
n Acc# 1st Author Year Reference
1) @i 22968 2007 E.Uberseder+ J,PR/C,75,035801,2007 Jour: Physical Review, Part C, Nuclear Physics, Vol.75, p.035801 (2007)
1 22968001 Info X4 X4+ general information
2 229680024 Info X4 X4+ T4 Pt:1 9-F-19(N,G)9-F-20,,SIG,,MXW
3 229680023 Info X4 X4+ T4 Pt:1 9-F-19(N,G)9-F-20,,SIG,,MXW
4 229680022 Info X4 X4+ T4 Pt:1 9-F-19(N,G)9-F-20,,SIG,,MXW
5 229680025 Info X4 X4+ T4 Pt:1 9-F-19(N,G)9-F-20,,SIG,,MXW
6 229680021 Info X4 X4+ T4 Pt:1 9-F-19(N,G)9-F-20,,SIG,,MXW
7 22968003 Info X4 X4+ T4 Pt:1 9-F-19(N,G)9-F-20,,SIG,,MXW
8 22968004 Info X4 X4+ T4 Pt:11 9-F-19(N,G)9-F-20,,SIG,,MXW,DERIV
@i = Show Summary (with code explanation, links to dependent data, etc.)
T4 = Show Tabulated Dataset (for Cross Section only)
R = Reaction-code expansion
Page generated: 2010/12/20,08:53:30 by X4-Servlet on www.nndc.bnl.gov
Project: "Multi-platform EXFOR-CINDA-ENDF", V.Zerkin, IAEA-NDS, 1999-2010
Request from: 130.199.112.67
New measurements of the 19F(n, γ)20F cross section and their implications for the stellar reaction rate
NUCLEAR REACTIONS 19F(n, γ), E=spectrum; measured Eγ, Iγ, Maxwellian averaged σ. Astrophysical implications discussed.
doi: 10.1103/PhysRevC.75.035801
Data from this article have been entered in the EXFOR database. For more information, access X4 dataset22968.


National Nuclear Data Center
BROOKHAVEN NATIONAL LABORATORY
NNDC Databases: NuDat | NSR | XUNDL | ENSDF | MIRD | ENDF | CSISRS | Sigma
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Note. Zoom and other interactive plotting features were tested under Web-browsers:
MS-Internet Explorer 5.5, Firefox 2.0, Safari, Opera 9.1, Netscape v-7.2
Page generated: 2010/12/20,08:54:45 by X4-Servlet on www.nndc.bnl.gov
Project: "Multi-platform EXFOR-CINDA-ENDF", V.Zerkin, IAEA-NDS, 1999-2010
Request from: 130.199.112.67
doi: 10.1103/PhysRevC.75.035801
Data from this article have been entered in the EXFOR database. For more information, access X4 dataset22968.

NSR & NUCLEAR PHYSICS

- We published NSR Reference article in Nuclear Instruments & Methods (first NSR journal paper)
- We finished historical physics articles NSR update, over 200 impact papers on nuclear structure, astrophysics & neutron physics were added to NSR (With help from McMaster U.)
- NSR paper range was extended from 1911 to 1896
- Educational value of NSR

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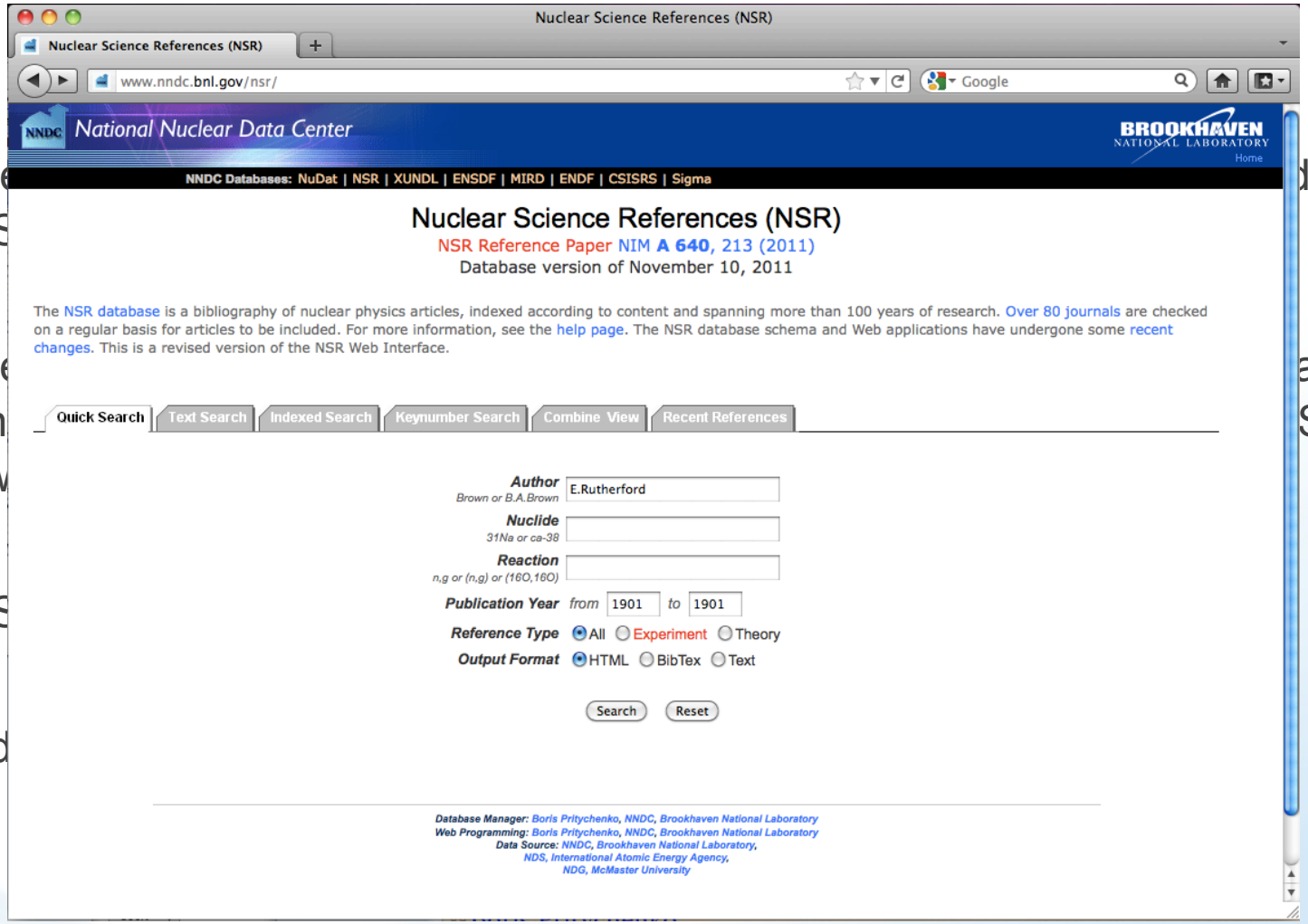

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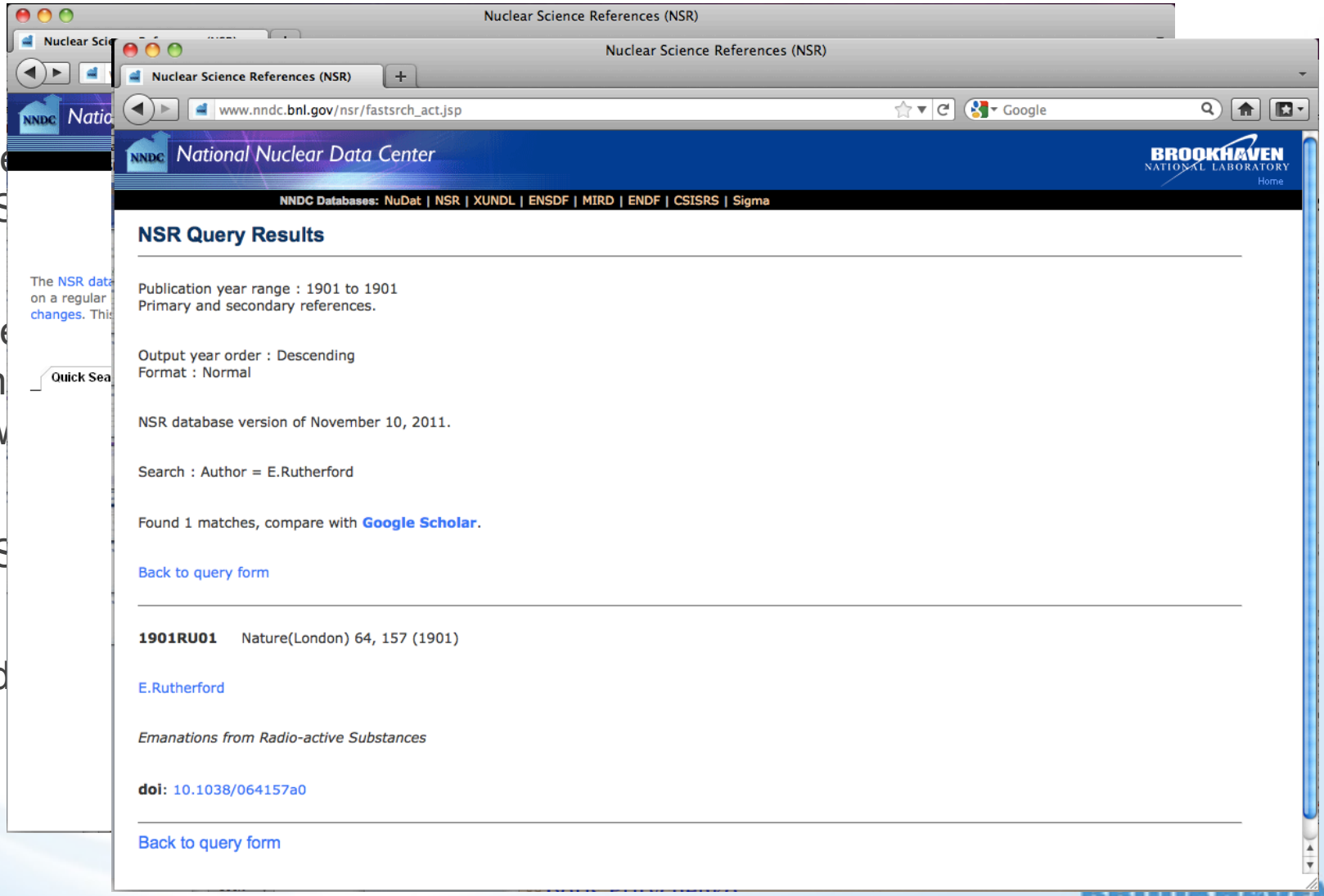

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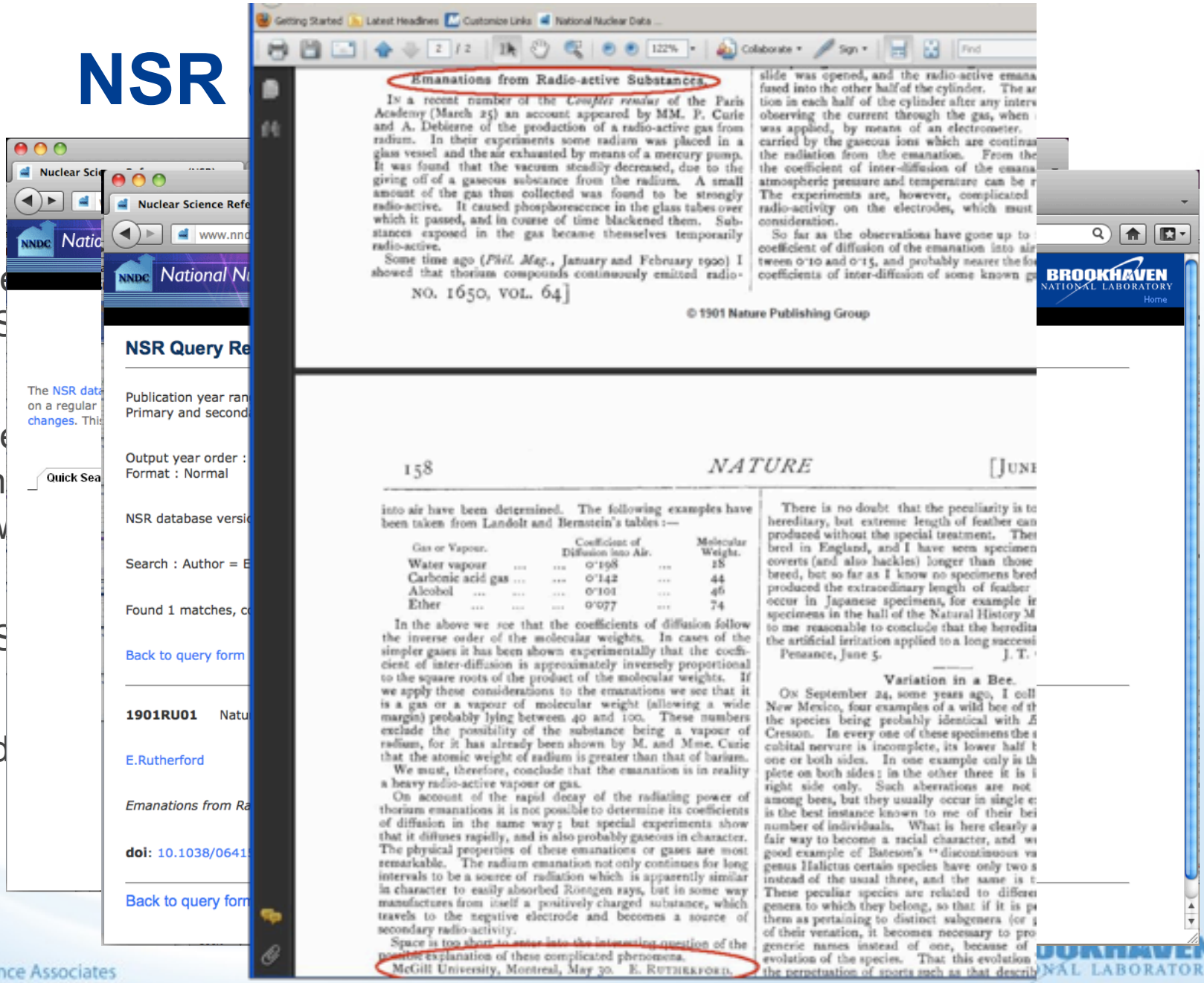

GOOGLE SCHOLAR

- NSR provides coverage for a large number of journals (>80), however, it is not a complete product
- To improve the coverage and ensure that nothing is missing direct links to Google Scholar are produced for “Quick Search” retrievals
- This will lead to discovery of additional references and further improvements of NSR

GOOGLE SCHOLAR

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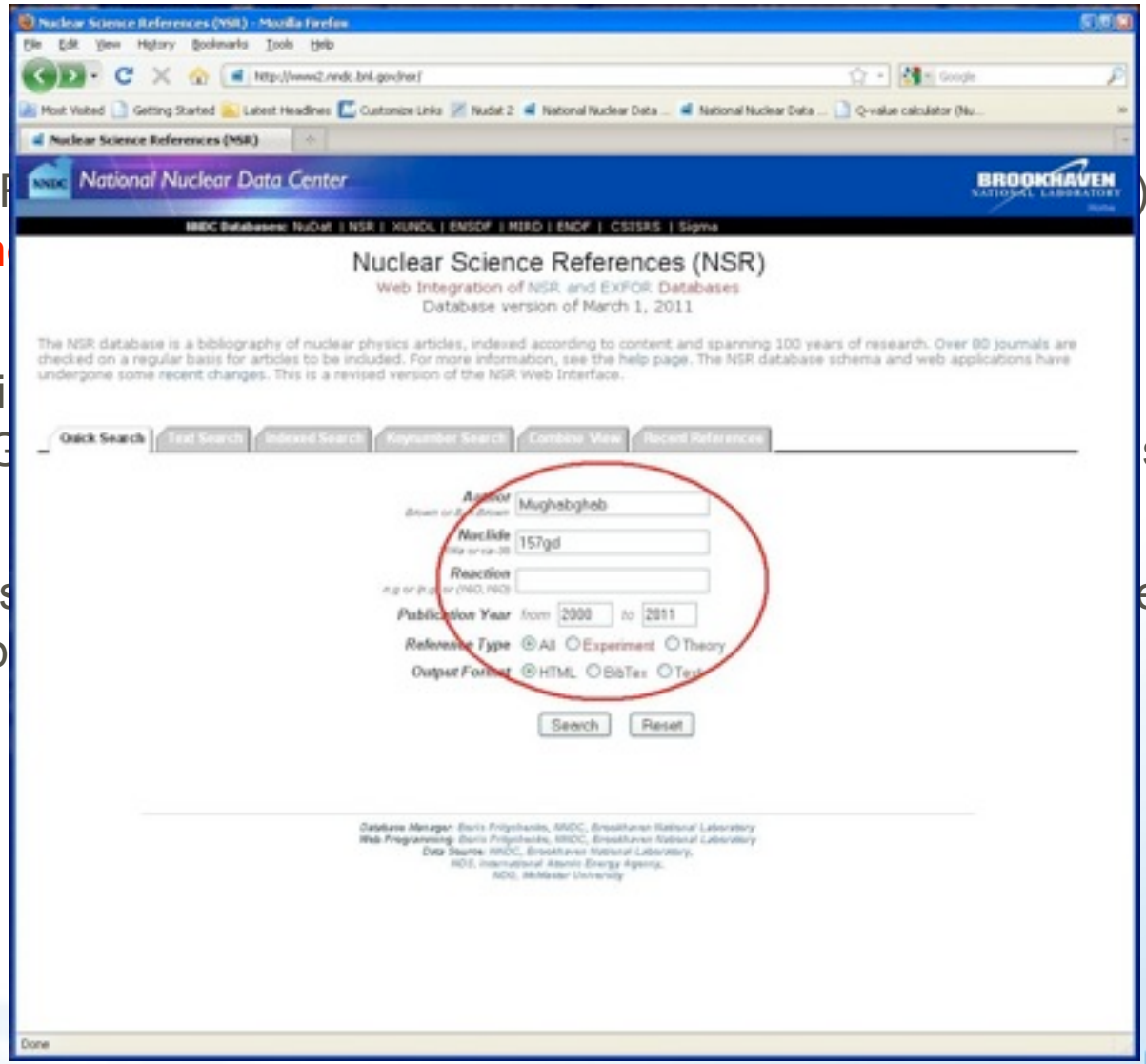

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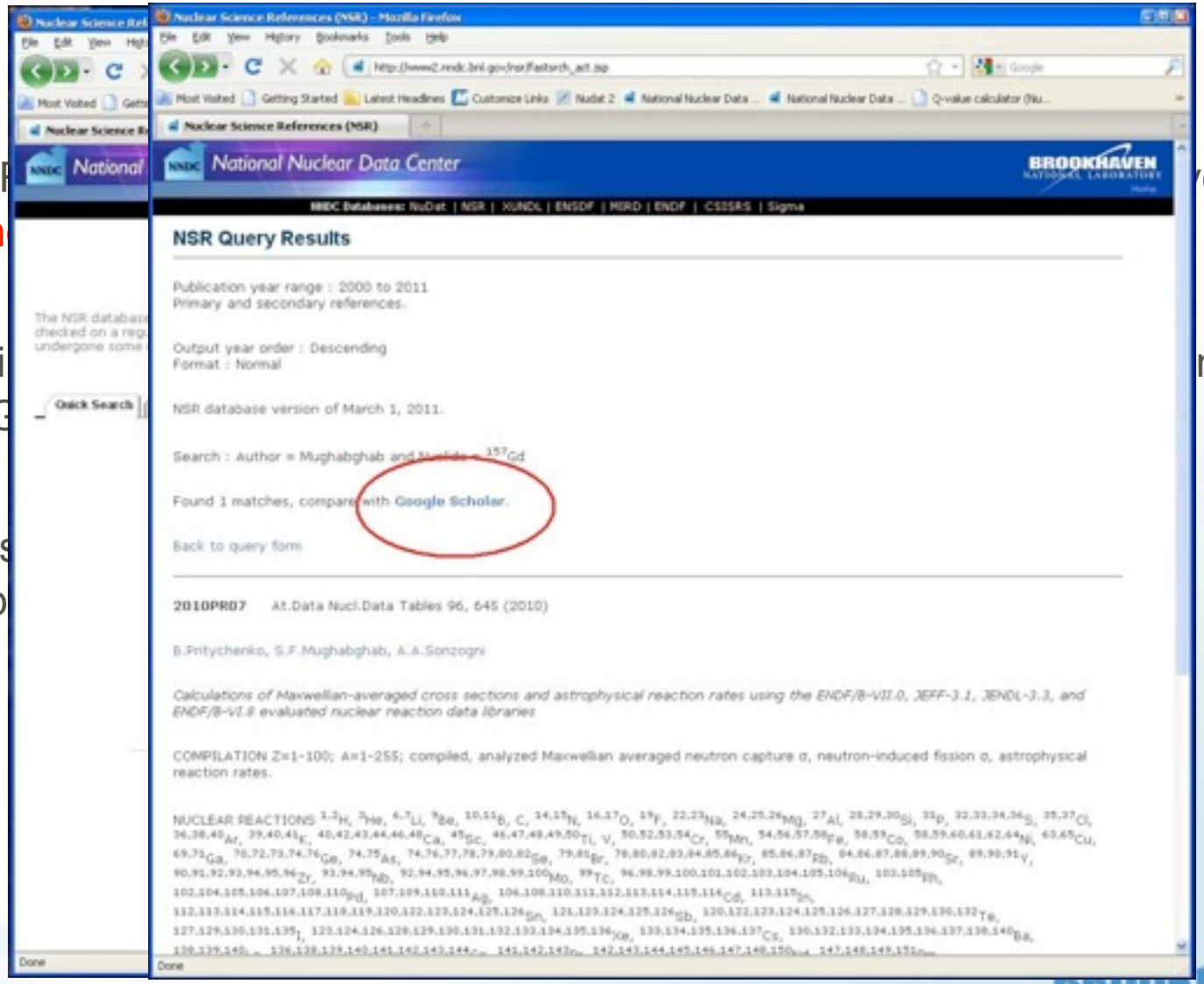

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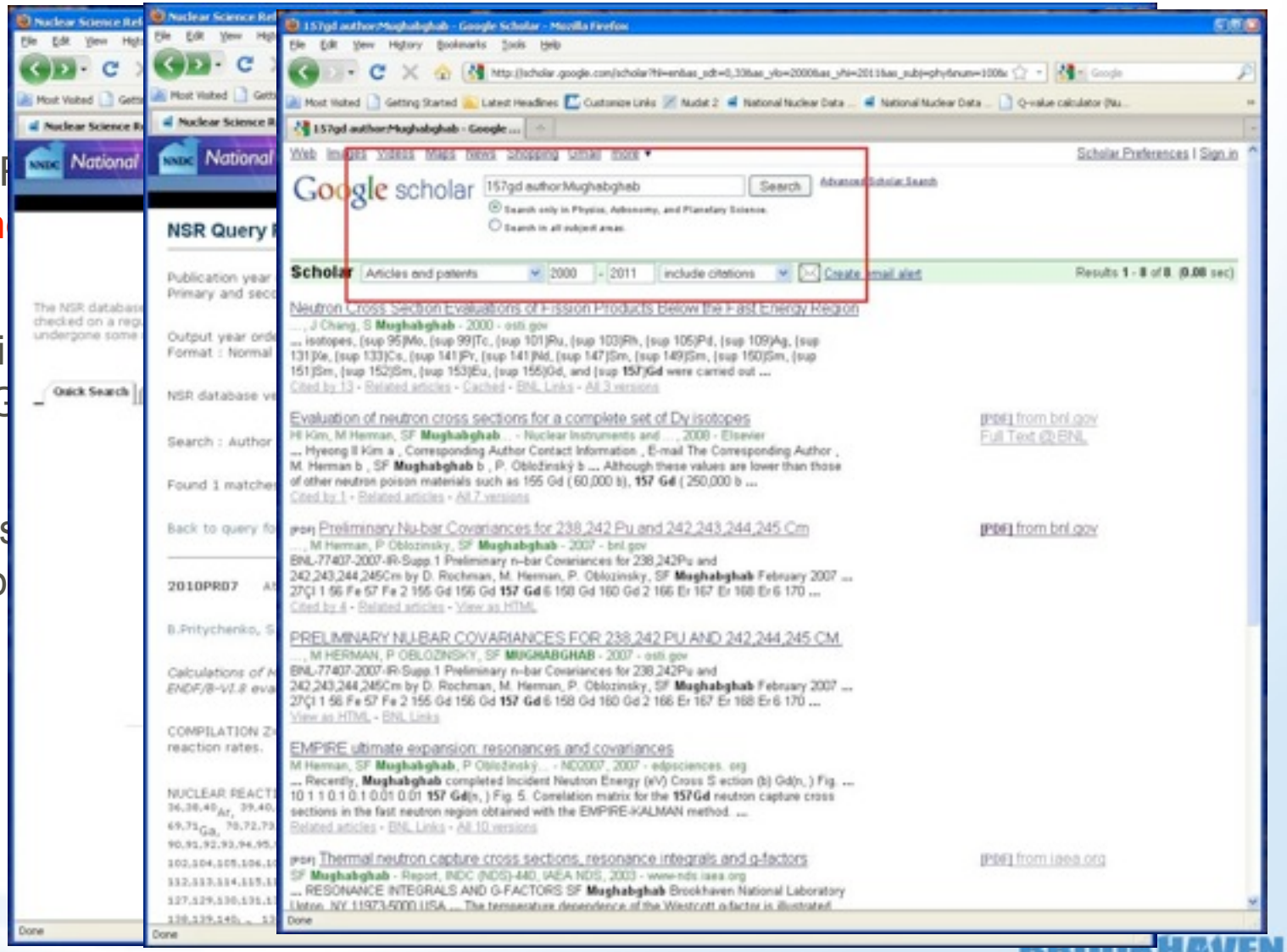

CONCLUSION & OUTLOOK

- NSR provides a very valuable service to nuclear physics community
- It is a collaborative product of three nuclear data centers that have own area of responsibilities
- We will try to increase our capabilities & user base by developing new applications such as BibTex link manager: http://www.nndc.bnl.gov/nsr/bibtexlink?2001PR01, targeting nuclear reaction community, etc.
- Future collaboration with Physical Review C