

Database of continuum gamma-ray data

P. (Vivian) Demetriou

Nuclear Data Section, IAEA, Vienna

International Atomic Energy Agency



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- 157 member states
- Over 2000 employees

International Atomic Energy Agency

- Mandate to promote and support the safe, secure and peaceful application of nuclear technologies

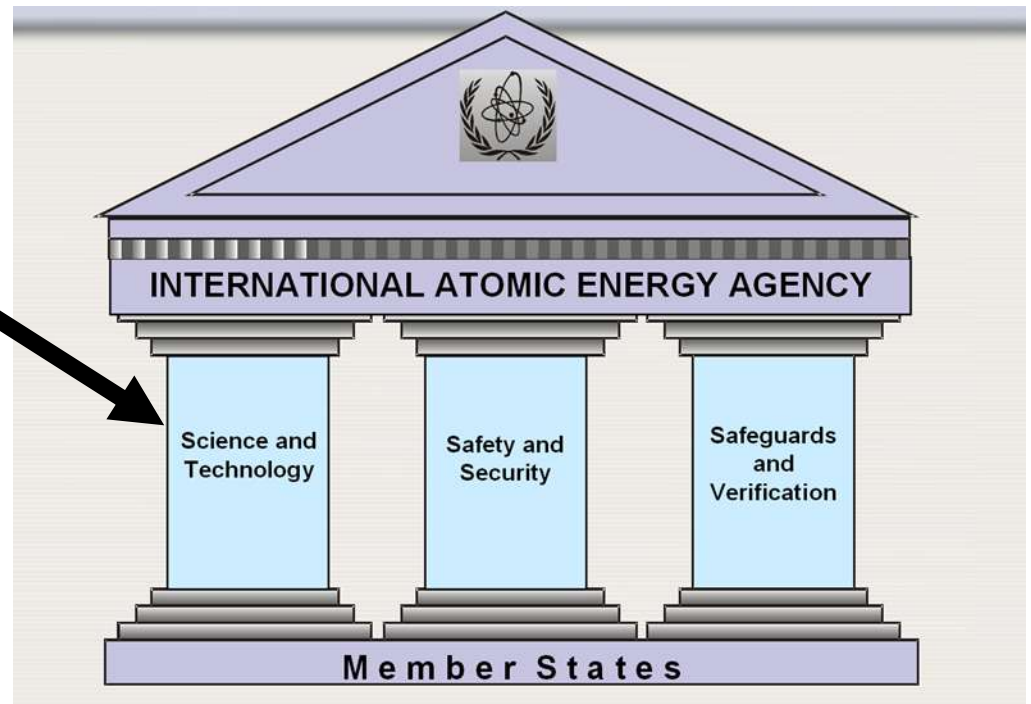
Nuclear Sciences and Applications:
Physical and Chemical Sciences

Isotope Hydrology

Radioisotopes and
Radiation Technology

Physics

Nuclear Data



Nuclear Data Section

- is responsible for the [development](#) and [dissemination](#) of atomic and nuclear data for applications through specific actions such as

-Data compilation and evaluation

*-Data services, Data Networks and User Support
(documents, CDs)*

-Nuclear Data Standards and Evaluation Methods

Data :

- **energy-dependent reaction probabilities (cross sections)**
- **energy and angular distributions of reaction products for many combinations of target and projectile**
- **atomic and nuclear properties of excited states**
- **nuclear structure and radioactive decay data**

Nuclear Data Services Webpage

<http://www-nds.iaea.org/>

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NEW TENDL-2011 TALYS Evaluated Nuclear Data Library [page] [retrieve]
EMPIRE-3.1 (Rivoli) System of codes for nuclear reaction calculations, February-2012 [link]
ENDF-B/VII.1 U.S. Evaluated Nuclear Data Library, issued in 2011 [page] [retrieve]

Main | All | Reaction Data | Structure & Decay | by Applications | Doc & Codes | Index | Events | News

EXFOR Experimental nuclear reaction data
LiveChart of Nuclides Interactive Chart of Nuclides
CINDA Nuclear reaction bibliography
ENDF Evaluated nuclear reaction libraries
ENSDF evaluated nuclear structure and decay data (+XUNDL) **
NSR Nuclear Science References *

NuDat 2.6 selected evaluated nuclear structure data **	RIPL reference parameters for nuclear model calculations	IBANDL Ion Beam Analysis Nuclear Data Library	Charged particle reference cross section Beam monitor reactions
PGAA Prompt gamma rays from neutron capture	FENDL-2.1 Fusion Evaluated Nuclear Data Library, Version 2.1	Photonuclear cross sections and spectra up to 140MeV	IRDF-2002 International Reactor Dosimetry File
NGATLAS atlas of neutron capture cross sections	Safeguards Data recommendations, August 2008	Medical Portal Data for Medical Applications	Standards - Neutron cross-sections, 2006 - Decay data, 2005

* Database at the IAEA, Vienna ** Database at the US NNDC

IAEA Nuclear Data Section

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Request: CD/DVD with documentation, data, codes, etc.

Quick Links: ADS-Lib, Atomic Mass Data Centre, CINDA, Charged particle reference cross section, DROSG-2000, EMPIRE-3.1, ENDF Archive, ENDF Retrieval, ENDF-6 Codes, ENDF-6 Format, ENDVER, ENSDF, ENSDF ASCII Files, ENSDF programs, EXFOR, FENDL-2.1, Fission Yields, GANDR, Geant4 Libraries, IBANDL, INDL/TSL

Mirrors

Partners

Events [3,4]
9th International Conference on Nuclear Option in Countries with Small and Medium Electricity Grids June 3-6, 2012 Zadar, Croatia
13th International Conference on Nuclear Reaction Mechanisms June 11-15, 2012 Villa Monasteron, Varenna, Italy

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IAEA Photonuclear Data Library

Cross sections and spectra up to 140 MeV

The library contains [Recommended](#) evaluated photonuclear data for 164 isotopes for incident photons (gamma rays) with energies mostly up to 140 MeV. The library includes cross sections and emission spectra in the ENDF-6 format and it is suitable for Monte Carlo transport calculations.

A list of corrections introduced by the Nuclear Data Section, as well as a list of errors that, for the time being, remain in the files, is [given](#). The results of test calculations with the library are presented [here](#).

In addition to recommended data, the Library contains [Other Files](#) with evaluated photonuclear data from 6 national/laboratory libraries (BOFOD, CNDC, EPNDL, JENDL, KAERI and LANL).

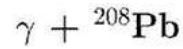
The report IAEA-TECDOC-1178, Handbook of photonuclear data for applications: Cross sections and spectra, October 2000, IAEA Vienna, contains [Description](#), including evaluation methodology and bibliography, Graphical Presentation available in [PDF](#) including comparison with experimental data, [Index of Nuclei](#), and [Atlas](#) of GDR parameters. A hardcopy in draft form, entitled "Handbook on photonuclear data for applications: Cross sections and spectra", is available (March 2000, 274 pages).

The database was developed under the IAEA Coordinated Research Project (1996-1999).
The participants and contributors to the project were:

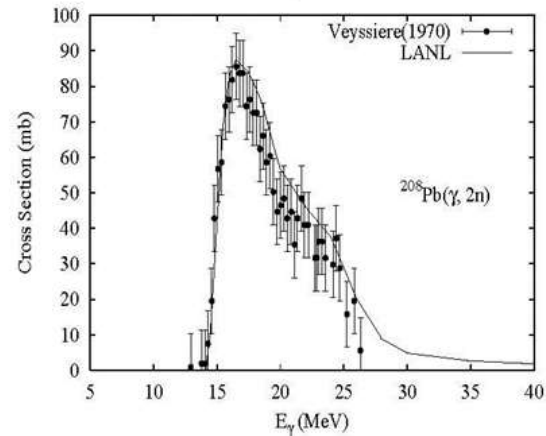
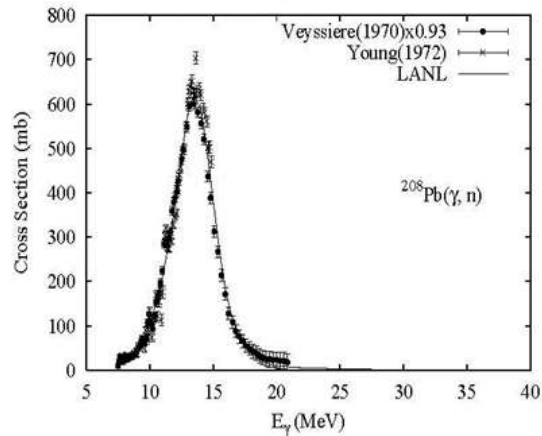
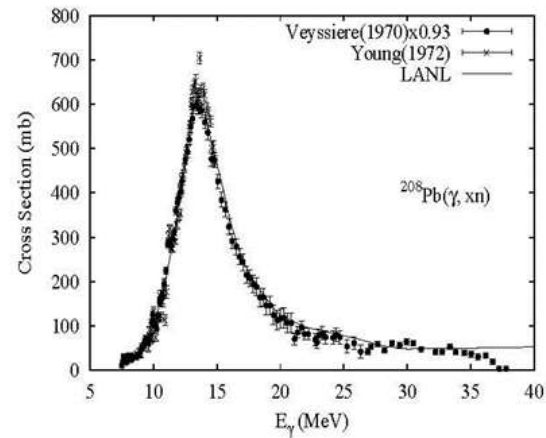
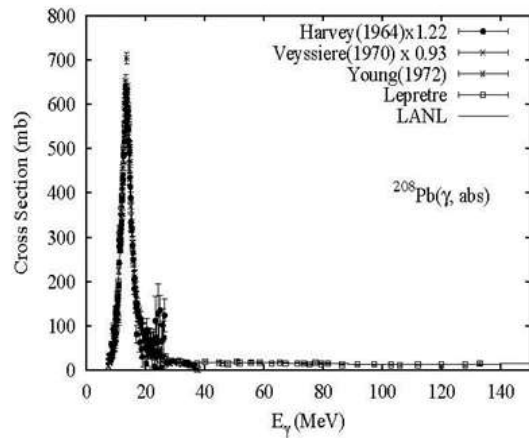
M.B.Chadwick	LANL, Los Alamos, USA	Chairman
P.Oblozinsky	IAEA, Vienna, Austria	Scientific secretary
A.I.Blokhin	IPPE, Obninsk, Russia	
T.Fukahori	JAERI, Tokai, Japan	
Y.Han	KAERI, Taejon, S.Korea	(on leave from CNDC Beijing)
Y.-O.Lee	KAERI, Taejon, S.Korea	
M.N.Martins	University Sao Paulo, Brazil	
S.F.Mughabghab	BNL, Brookhaven, USA	
V.V.Varlamov	CDFE, Moscow, Russia	
B.Yu	CNDC, Beijing, China	
J.Zhang	CNDC, Beijing, China	

NDS Home page	Recommended Files (FTP)	Other Files (FTP)
Description (PDF-742 kb) , References (PDF-58 kb)	Graphical Presentation (PDF-4.3 Mb) and Index (PDF-37 kb)	Atlas of GDR Parameters (PDF-205 kb)

IAEA Photonuclear Data Library



Abundance (%)	Threshold Energies (MeV)								
	γ, n	γ, p	γ, t	$\gamma, \text{He-3}$	γ, α	$\gamma, 2n$	γ, np	$\gamma, 2p$	$\gamma, 3n$
52.40	7.37	8.01	12.88	14.39	-0.52	14.11	14.85	15.38	22.19



The screenshot shows a web browser window with the URL <http://www-nds.iaea.org/pgaa/>. The page header includes the IAEA logo and the text "International Atomic Energy Agency Nuclear Data Services" and "Секция Ядерных Данных МАГАТЭ". A search bar is visible in the top right. The main content area features a red heading "Database for Prompt Gamma-ray Neutron Activation Analysis" followed by a paragraph describing the PGAA method. Below this is a red-bordered box containing the text "PGAA-IAEA Database Viewer" and a description of its interactive search capabilities. The page also includes sections for "Documentation", "PGAA Database Files", "Evaluated Gamma-ray Activation File (EGAF)", "PGAA Database Evaluation", "Isotope Explorer 2.2 ENSDF Viewer", and "The CRP". A footer section lists "DURATION: 1999-2003" and "PROJECT OFFICER: Raquel Paviotti-Corcuera".

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Database for Prompt Gamma-ray Neutron Activation Analysis

Neutron-capture prompt-gamma activation analysis (PGAA) is particularly valuable as a non-destructive nuclear method in the measurement of elements that do not form neutron capture products with delayed gamma-ray emissions. Inaccurate and incomplete data have been a significant hindrance in the qualitative and quantitative analysis of complicated capture-gamma spectra by means of PGAA. The main reason in producing this database was to improve the quality and quantity of the required data in order to make possible the reliable application of PGAA in fields such as materials science, geology, mining, archaeology, environment, food analysis and medicine.

The resulting database provides a variety of tables for all natural elements (from H to U) including the following data: isotopic composition, thermal radiative cross section (total and partial), Westcott g-factors, energy of the gamma rays (prompt and delayed), decay mode, half life and branching ratios.

PGAA-IAEA Database Viewer
Undertakes interactive searches of the PGAA database by isotope, energy, or cross section. Data for the viewer were received from Richard B. Firestone (Lawrence Berkeley National Laboratory, USA), and the viewer was developed by Viktor Zedkin (IAEA, NDS).

Documentation

Report of the IAEA Coordinated Research Project for the Development of a Database for Prompt Gamma-ray Neutron Activation Analysis

PGAA Database Files

Adopted PGAA database and associated files in EXCEL, PDF, and TEXT formats. Lone et al, Reedy and Frankle archival databases.

Evaluated Gamma-ray Activation File (EGAF)

Adopted PGAA database in ENSDF format. Data can be viewed with Isotope Explorer 2.2 ENSDF Viewer.

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ENSDF format versions of the adopted PGAA database, and the Budapest and ENSDF isotopic input files. Decay scheme balance and statistical analysis summaries are provided. Received from Richard B. Firestone (Lawrence Berkeley National Laboratory, USA).

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Windows software for viewing the level scheme drawings and tables provided in ENSDF format. The complete ENSDF database as of December 2002 is included. Written by S.Y. Frank Chu and Richard B. Firestone (Lawrence Berkeley National Laboratory, USA) and L P Ekström (Lund University, Sweden).

The CRP

Database developed as part of a Coordinated Research Project for the Development of a Database for Prompt Gamma-ray Neutron Activation Analysis sponsored by the International Atomic Energy Agency (IAEA). The data are derived from isotopic measurements compiled in the Evaluated Nuclear Structure Data File (ENSDF), updated when necessary, and from elemental measurements performed at the Budapest Reactor Centre.

DURATION: 1999-2003 - **PROJECT OFFICER:** Raquel Paviotti-Corcuera



International Atomic Energy Agency

PGAA

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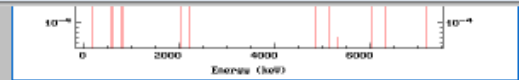
Selected Element

1-Hydrogen (2)
H-1 (1)
H-2 (1)

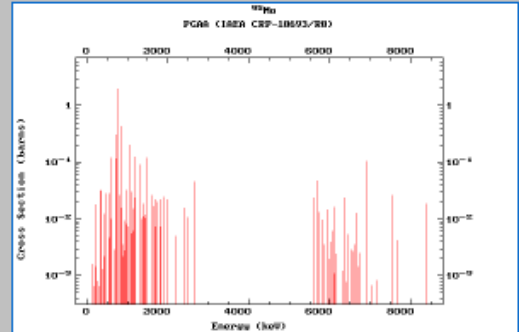
1	2																	18	19	20											36	37	38			
3	4																	10	11	12											16	17	18			
5	6	7	8	9																	13	14	15											19	20	21
11	12																	13	14	15											16	17	18			
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	
55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	
87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112											
101	102	103	104	105	106	107	108	109	110	111	112											118	119	120												
* Lanthanides		Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu																					
** Actinides		Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr																					

- Database Search:**
- from smaller version of database
 - from full database (see: iterations)
- Display:**
- Table of elements
 - Table of elements & isotopes
- Download:**
- PGAA data as plain text
 - Adopted Gamma Rays for Elements
 - Most Intense Gamma Rays

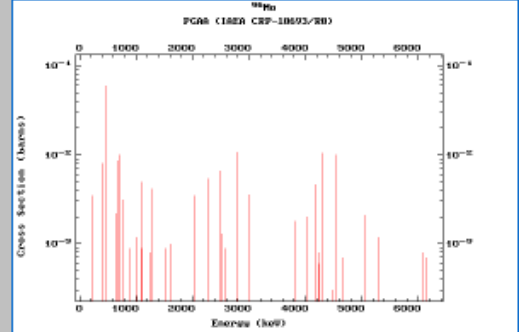
Web design: V.Zerkov, IAEA, August 2002
Last updated: 05/22/2012 12:24:13



Mo-95



Mo-96



The screenshot shows a web browser window with the URL <http://www-nds.iaea.org/pgaa/>. The page header includes the IAEA logo and the text "International Atomic Energy Agency Nuclear Data Services" and "Секция Ядерных Данных МАГАТЭ". A search bar is visible in the top right. The main content area features a red heading "Database for Prompt Gamma-ray Neutron Activation Analysis". Below this, there is a paragraph describing the PGAA method, followed by a list of data provided in the database. A section titled "PGAA-IAEA Database Viewer" describes the interactive search tool. The "Documentation" section includes a report on the development project. The "PGAA Database Files" section lists various file formats. The "Evaluated Gamma-ray Activation File (EGAF)" section is highlighted with a red box and describes the EGAF database. Other sections include "PGAA Database Evaluation", "Isotope Explorer 2.2 ENSDF Viewer", and "The CRP". At the bottom, there is a summary of the project duration (1999-2003) and the project officer (Raquel Paviotti-Corcuera).

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DURATION: 1999-2003 - **PROJECT OFFICER:** Raquel Paviotti-Corcuera

```

97RU 96RU(N,G) E=THERMAL: {~EGAF}
97RU c Evaluated Gamma-ray Activation File (EGAF).
97RU2c Evaluated by R.B. Firestone (LBNL), December 2003.
97RU c BR$|s{-0}=0.29 2 (1981MuZQ)
97RU cG RI$Elemental |s(|g) assuming %Abundance=5.54 14
97RU N 18.1 5
97RU PN
97RU2PN Thermal cross section in barns.
97RU cN NR$Isotopic |s(|g)=NR*RI.
97RU2cN Divide by |s{-0} for intensity per neutron capture.
97RU L 0 5/2+
97RU L 189.24 43/2+
97RU G 189.24 4 0.0099 11
97RU L 527.48 21 3/2+
97RU G 527.48 21 0.0045 12
97RU L 8112 3 1/2+

97RU 96RU(N,G) E=THERMAL:^BUDAPEST
97RU c Budapest Reactor data measured with thermal beam.
97RU cG RI$Elemental |s(|g) assuming %Abundance=5.54 14
97RU N 18.1 2
97RU PN
97RU2PN Thermal cross section in barns.
97RU L 0 5/2+
97RU L 189.2 3/2+
97RU G 189.24 4 0.0099 11
97RU CG E$ALSO PLACED IN 102RU
97RU L 527.8 3/2+
97RU G 527.48 21 0.0045 12
97RU L 8112 3 1/2+

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C

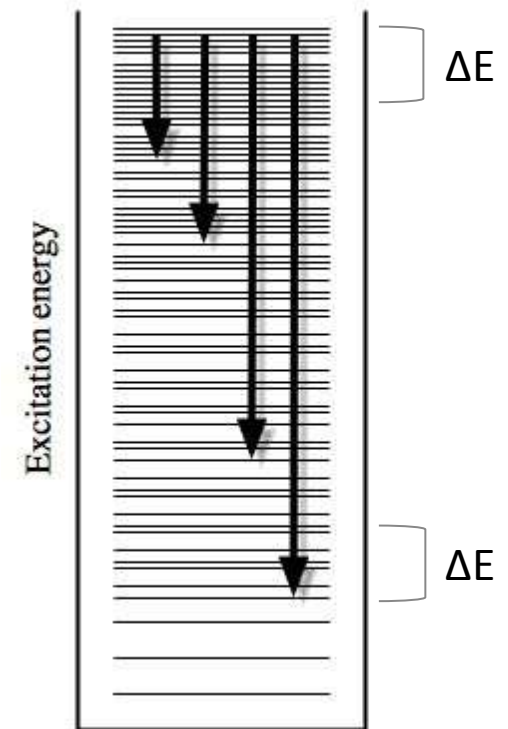
C

IAEA Coordinated Research Projects

- An important IAEA mechanism for organizing international research work to achieve specific research objectives
- Bring together researchers in both developing and developed countries to address a problem of common interest
- CRPs are initiated upon advice and suggestions of expert scientists “consultants” who participate in a Consultant’s Meeting
- A proposal is formed and submitted for approval to the IAEA Committee for Coordinated Research Activities (CCRA)
- Following approval there is a call for submission of research proposals by interested researchers
- **3 Research Coordination Meetings are held to define objectives, outputs & methodology, outline actions to be taken, monitor progress and prepare final report (TEC DOC)**
- Duration is normally 3 to 5 years
- Results are available in online databases or on CDs

Continuum γ -ray data

- statistical properties of nuclei: γ -ray strength functions, level densities
- are directly related to partial decay widths and reduced transition probabilities
- are used to describe de-excitation of nucleus in the continuum
- are input data to statistical model calculations of nuclear reaction cross sections



Applications

- Reactor and ADS technologies
 - actinide build-up (neutron-induced cross sections)
 - criticality safety (delayed neutrons)
 - monitoring of reactors (beta-decay/antineutrino spectra)
- Medical applications, materials analysis
- Nuclear astrophysics (heavy-element nucleosynthesis)

Reference Input Parameter Library (RIPL) : model calculations of γ -ray strength functions + level densities (<http://www-nds.iaea.org/ripl3/>)

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Databases » EXFOR | ENDF | CINDA | IBANDL | Medical | PGAA | NGAtlas | RIPL | FENDL | IRDF-2002 | IRDFF

Reference Input Parameter Library (RIPL-3)

R. Capote, M. Herman, P. Oblozinsky, P.G. Young, S. Goriely, T. Belgya, A.V. Ignatyuk, A.J. Koning, S. Hilaire, V.A. Plujko, M. Avrigeanu, O. Bersillon, M.B. Chadwick, T. Fukahori, Zhigang Ge, Yinlu Han, S. Kailas, J. Kopecky, V.M. Maslov, G. Reffo, M. Sin, E.Sh. Soukhovitskii and P. Talou

Nuclear Data Sheets - Volume 110, Issue 12, December 2009, Pages 3107-3214

10 entries of the Optical Model database corrected in December 2010.

Introduction | MASSES | LEVELS | RESONANCES | OPTICAL | **DENSITIES** | **GAMMA** | FISSION | CODES | Contacts

Introduction

We describe the physics and data included in the Reference Input Parameter Library, which is devoted to input parameters needed in calculations of nuclear reactions and nuclear data evaluations. Advanced modelling codes require substantial numerical input, therefore the International Atomic Energy Agency (IAEA) has worked extensively since 1993 on a library of validated nuclear-model input parameters, referred to as the Reference Input Parameter Library (RIPL). A final RIPL coordinated research project (RIPL-3) was brought to a successful conclusion in December 2008, after 15 years of challenging work carried out through three consecutive IAEA projects. The RIPL-3 library was released in January 2009, and is available on the Web through <http://www-nds.iaea.org/ripl-3/>. This work and the resulting database are extremely important to theoreticians involved in the development and use of nuclear reaction modelling (ALICE, EMPIRE, GNASH, UNF, TALYS) both for theoretical research and nuclear data evaluations.

The numerical data and computer codes included in RIPL-3 are arranged in seven segments: **MASSSES** contains ground-state properties of nuclei for about 9000 nuclei, including three theoretical predictions of masses and the evaluated experimental masses of Audi et al. (2003). **DISCRETE LEVELS** contains 117 datasets (one for each element) with all known level schemes, electromagnetic and γ -ray decay probabilities available from ENSDF in October 2007. **NEUTRON RESONANCES** contains average resonance parameters prepared on the basis of the evaluations performed by Ignatyuk and Mughabghab. **OPTICAL MODEL** contains 495 sets of phenomenological optical model parameters defined in a wide energy range. When there are insufficient experimental data, the evaluator has to resort to either global parameterizations or microscopic approaches. Radial density distributions to be used as input for microscopic calculations are stored in the MASSES segment. **LEVEL DENSITIES** contains phenomenological parameterizations based on the modified Fermi gas and superfluid models and microscopic calculations which are based on a realistic microscopic single-particle level scheme. Partial level densities formulae are also recommended. All tabulated total level densities are consistent with both the recommended average neutron resonance parameters and discrete levels. **GAMMA** contains parameters that quantify giant resonances, experimental gamma-ray strength functions and methods for calculating gamma emission in statistical model codes. The experimental GDR parameters are represented by Lorentzian fits to the photo-absorption cross sections for 102 nuclides ranging from ^{23}V to ^{238}Pu . **FISSION** includes global prescriptions for fission barriers and nuclear level densities at fission saddle points based on microscopic HFB calculations constrained by experimental fission cross sections.

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Level Densities Segment

Total Level Densities

Back-Shifted Fermi Gas Model (BSFG)

Level density parameters for the BSFG model obtained by fitting the Fermi-gas model formula to the recommended spacings of s-wave neutron resonances and to the cumulative number of low-lying levels.

[Data File \(34.3kB\)](#) [README File \(2.2kB\)](#)

Gilbert-Cameron Model

Level density parameters for the Gilbert-Cameron model obtained by fitting the Fermi-gas model formula to the recommended spacings of s-wave neutron resonances and by matching the corresponding level density to discrete levels.

[Data File \(42.8kB\)](#) [README File \(2.4kB\)](#)

Enhanced Generalized Superfluid Model (EGSM)

Level density parameters for the Enhanced Generalized Superfluid Model (EGSM), which takes into account collective enhancement of the nuclear level density in addition to shell and superfluid effects. The parameters were obtained by fitting the corresponding model formulas to the recommended spacings of s-wave neutron resonances and by matching level densities to discrete levels.

[Data File \(26.1kB\)](#) [README File \(2.4kB\)](#)

Z Systematics:

[Data File \(1.3kB\)](#) [README File \(1.3kB\)](#)

Retrieval of Total Level Density Parameters

Atomic number (Z)
 Mass number (A)
 (blank for all mass numbers)

Plot of Total Level Density Parameters (a-parameters)

Select one of below and input no.:

Atomic number (Z)
 Mass number (A)
 Neutron number (N)

X-axis:

Plot of Total Level Densities

Atomic number (Z)
 Mass number (A)

HFB Total Level Densities

The files contains the HFB plus combinatorial nuclear level densities at ground state deformations^[1]. The nuclear level density is coherently obtained on the basis of the single-particle level scheme and pairing energy derived at the saddle point deformation or shape isomer deformation. The same BSk14 Skyrme force^[2] is used to estimate the fission saddle and isomeric points.

References:

- [1] S. Goriely, S. Hilaire, A.J. Koning, Phys. Rev. C (2008) in press
 [2] S. Goriely, M. Samyn, J.M. Pearson, Phys. Rev. C75 (2007) 064312

[Data Files \(total 486.6MB\)](#) [README File \(3.1kB\)](#)

Retrieval of HFB Total Level Densities

Atomic number (Z)
 Mass number (A)

Shell Correction prescriptions

Shell corrections calculated with the **Myers-Swiatecki** mass formula^[1].

References:

- [1] W.D. Myers and W.J. Swiatecki, Ark. Fizik. 36, 343 (1967).

[Data File \(280kB\)](#) [README File \(2.1kB\)](#)

Retrieval of Level Densities Data and Shell Corrections

Atomic number (Z)
 Mass number (A)



Reference Input Parameter Library (RIPL-3)

R. Capote, M. Herman, P. Oblozinsky, P.G. Young, S. Goriely, T. Belgya, A.V. Ignatyuk, A.J. Koning, S. Hilaire, V.A. Plujko, M. Avrigeanu, O. Bersillon, M.B. Chadwick, T. Fukahori, Zhigang Ge, Yinlu Han, S. Kailas, J. Kopecky, V.M. Maslov, G. Reffo, M. Sin, E.Sh. Soukhovitskii and P. Talou

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Gamma-ray Segment

Experimental Giant Dipole Resonance (GDR) Parameters

The values and errors of giant dipole resonance (GDR) parameters are presented which were obtained by a fit of the theoretical photoabsorption cross sections to the experimental data for 121 nuclides from 12-C through 239-Pu. The values and errors of the shape parameters of the Lorentzian-like curves corresponding to the giant dipole resonance excitation are presented.^[1-8]

References

- [1] J. Kopecky, in Handbook for calculations of nuclear reaction data. Reference Input Parameter Library (RIPL), IAEA-TEDOC-1034, 1998, Ch.6
- [2] T. Belgya, O. Bersillon, R. Capote, T. Fukahori, G. Zhigang, S. Goriely, M. Herman, A.V. Ignatyuk, S. Kailas, A. Koning, P. Oblozinsky, V. Plujko, P. Young. Handbook for calculations of nuclear reaction data: Reference Input Parameter Library-2, IAEA-TECDOC-1506, Vienna, 2006, Ch.7.
- [3] V.A. Plujko, I.M. Kadenko, E.V. Kulich, S. Goriely, O.I. Davidovskaya, O.M. Gorbachenko, in Proceeding of Workshop on Photon Strength Functions and Related Topics, Prague, Czech Republic, June 17-20, 2007, Proceedings of Science, PSF07, 2008
- [4] S.S.Dietrich, B.L.Berman; At. Data Nucl. Data Tables., 199, 38(1988).
- [5] M.B. Chadwick, P. Oblozinsky, P.E. Hodgson, G. Reffo, Phys.Rev. C44(1991)814.
- [6] M.B.Chadwick, P.Oblozinsky, A.I.Blokhin, T.Fukahori, Y.Han, Y. O.Lee, M.N.Martins, S.F.Mughabghab, V.V.Varlamov, B.Yu, J.Zhang. Handbook on photonuclear data for application. Cross sections and spectra. IAEA TECDOC 1178, Vienna, 2000
- [7] Experimental Nuclear Reaction Data Library EXFOR
- [8] CERN Program Library, MINUIT (D506), Function Minimization and Error Analysis

[README File \(16kB\)](#)

[Standard Lorentzian model \(SLO\) \(22,3kB\)](#) [Modified Lorentzian model \(MLO\) \(22,0kB\)](#)

Theoretical GDR Parameters

Predictions of the GDR energies and widths using Goldhaber-Teller model for about 6000 nuclei with $14 \leq Z \leq 110$ lying between the proton and the neutron driplines.

[Data File \(281kB\)](#) [README File \(3.5kB\)](#)

Microscopic E1 Photoabsorption Strength-Functions

Predictions of the E1-strength functions for 3317 nuclei with $8 \leq Z \leq 84$ lying between the proton and the neutron driplines. The E1-strength functions are determined within the QRPA model based on the SLy4 Skyrme force^[1,2].

References

- [1] S. Goriely, E. Khan, Nucl. Phys. A706, 217 (2002).
- [2] E. Khan et al., Nucl. Phys. A694 (2001) 103.

Retrieval of GDR Parameters

Atomic number (Z)

Mass number (A)

(blank for all mass numbers)

Retrieval of Microscopic E1 Photoabsorption Strength-Functions

Atomic number (Z)

Mass number (A)

γ -ray strength data

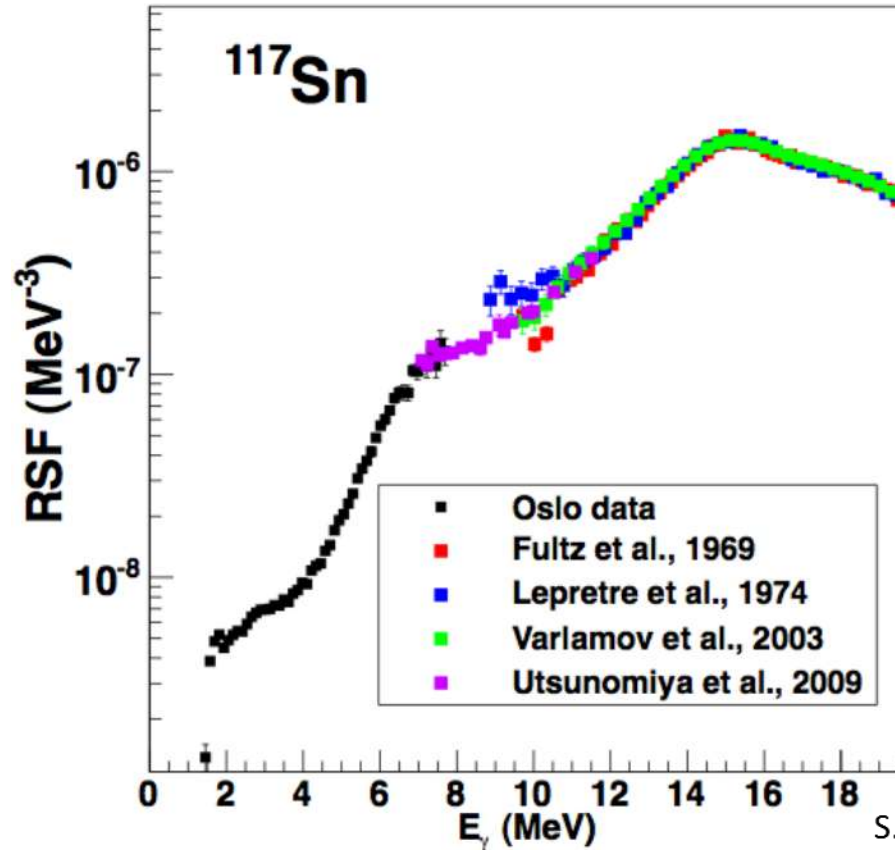
- Photonuclear reactions
- Primary gamma transitions from neutron capture
- Nuclear resonance fluorescence (γ , γ'), electron scattering, proton scattering
- Two-step & multi-step γ cascades following neutron capture
- Scattering with polarized beams
- Particle- γ coincidence measurements

Lots of data have been measured over the past decades BUT

there is no database where they are all compiled and evaluated

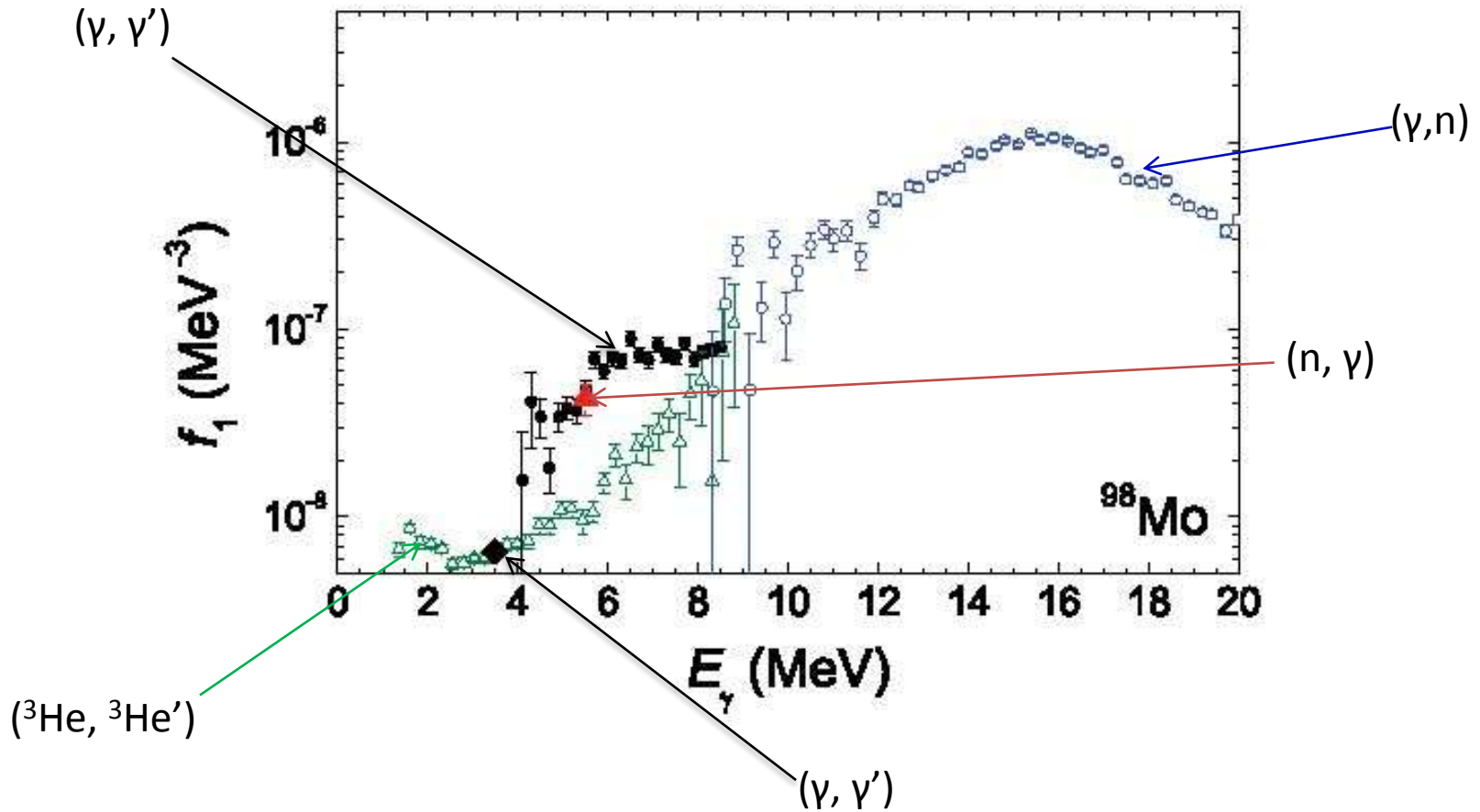
Different approaches

probing different energy regions above or below B_n : data should match smoothly



S. Siem, 20th NSDD Meeting,
Kuwait, 27-31 Jan 2013

Complementarity of different measurements



Database...dedicated to continuum γ -ray data

Compilation of all existing data

- easily accessible
- user-friendly retrieval system
- on-the-fly plotter-viewer

Evaluation of available data

- Assessment of data and uncertainties
- Resolve discrepancies between different types of measurements
- Ensure continuity-consistency of different types of data
- Provide recommended data for applications → **RIPL**

Priority list for new measurements

How to proceed...

an initiative of S. Siem and R. Firestone

- Consultant's Meeting to be held at IAEA
 - meeting of experts (experiment, theory, evaluation) to:
 - define problem – data needs
 - set objectives
 - outline methodology
 - propose best way to achieve goals: coordinated effort
- Coordinated effort
 - IAEA Coordinated Research Project or
 - IAEA Data Development Project
- The outcome of the CM would be of importance for a future RIPL-4 effort