



International Atomic Energy Agency

NSDD activities at the IAEA

D. Abriola

Nuclear Data Section

Department of Nuclear Sciences and Applications

USNDP Meeting, BNL, Nov. 2009

IAEA Activities Relating to NSDD

- Coordinated Research Projects (CRPs)
- Workshops
- Direct financial support for ENSDF evaluators and horizontal evaluation/compilation activities
- ENSDF evaluations
- NSR compilations
- Dissemination

The only CRP related to NSDD: “Updated Decay Data Library for Actinides” is finishing in early 2010

- I mentioned this fact at the 2008 USNDP meeting and at the NSDD network meeting in Vienna, March 2009
- So far no new requests from Member States for NSDD related activities....
- The funds involved are modest, but it is a way to foster NSDD activities in the international community and provide “visibility”

Workshops

- The IAEA co-sponsored with IFIN-HH (Romania) the **ENSDF-2009 Workshop** to train potential new evaluators from Europe and Turkey, March/April 2009
- **ENSDF Theory and Evaluation**, ICTP, Trieste, Italy, December 2009
- Support to the **DDEP Workshop**, CIEMAT, Madrid, Spain, June 2010

Europe and ENSDF

ENSDF-2009 Workshop

IFIN-HH, Magurele, nr. Bucharest, Romania

30 March – 3 April 2009 (5 days)

Lecturers:

**J.K. Tuli, A. Sonzogni, Balraj Singh,
F.G. Kondev, T. Kibedi, N. Nica, D. Abriola**

Participants

Melih Bostan (Turkey)

Sefa Erturk (Turkey)

Manssour Fadil (France)

Monica Galan (Spain)

Sakari Juutinen (Finland)

Aurelian Luca (Romania)

Alexandru Negret (Romania)

Bernd Pfeiffer (Germany)

Janos Timar (Hungary)

Tsanka Venkova (Bulgaria)

Kazimir Zuber (Poland)

Achievement

Mass chain $A=84$ was evaluated as a “group effort” by all participants and is about to be published

Next ENSDF Workshop

- ENSDF Theory and Evaluation,
ICTP, Trieste, Italy, December 2009

ICTP Workshop approved but 0 funds!

New Contracts - 2009 (1)

1. Joshi and Jain (India) Approved Sep. 1st
Evaluation: $A=139$
Experiment: mass regions 130 & 180
2. Wang and Audi (China) Approved Sep. 1st
Atomic Mass Evaluation (Horizontal)
3. Zuber (Poland) Approved Oct. 20th
Evaluation: $A=61$
XUNDL: ^{97}Zr , $^{97\text{m}}\text{Y}$, ...

New Contracts - 2009 (1')

AME New structure

Coordinator

AME2013 : G.A.

AME20xx : Wang Meng

Contributors

- all labs welcome : 20% to 100%
- two times one week at CSNSM-Orsay
- evaluate and check some of the published material

Presently :

- IMP-Lanzhou : Wang Meng
- CSNSM-Orsay : David Lunney (Ame) + Jean Blachot (Nubase)
- GSI-Darmstadt : Berndt Pfeiffer (Ame)
- ANL-Argonne : Filip Kondev (Nubase + Ame)
- MPI-Heidelberg : N.N. 2-years post-doc (Ame + programing)



New Contracts - 2009 (2)

4. A. Negret (Romania) Approved Oct. 20th
Evaluation: A=75
5. J. Timar (Hungary) Approved Oct. 20th
Evaluation: A=129
XUNDL: ^{134}Pr and ^{132}La
6. N. Stone (USA) Proposed Oct.
Nuclear Moments (Horizontal):
Compilation and evaluation
7. D. Symochko (Ukraine) A=65 mass chain
evaluation (Draft sent to me yesterday)

ENSDF evaluations (D. Abriola)

- Collaboration with A. Sonzogni,
A=72 accepted for publication
- As part of ENSDF-2009 - evaluation of ^{84}Nb in
collaboration with M. Galan (Spain)
A=84 accepted for publication
- New Mass chain A=144 started Oct. 2009 in
collaboration with A. Sonzogni
(17 nuclei, 87 new experimental references,
19 XUNDL-files)

NSR compilations (1)

Compilation began **September 2005** when IAEA designated **Mark Kellett** as NSR keyword compiler

Three journals covered by the IAEA (~20-25% of NSR entries):

Nuclear Physics A

European Physical Journal A

Physics Letters B

IAEA/NNDC collaborative visits:

- **M.A. Kellett** one week visit to NNDC, July 2005
- **M.A. Kellett** one week visit to NNDC, Dec. 2005
- **D. Winchell** one week visit to IAEA, June 2006
- **M.A. Kellett** one week visit to NNDC, Oct. 2006
- **M. Bhattacharya** one week visit to IAEA, Oct. 2007
- **B. Pritychenko** to visit IAEA, Nov. 2009

NSR compilations (2)

IAEA has compiled the following papers:

2005: 258 [134] (from Sept to Dec)

2006: 479 [348]

2007: 869 [495]

2008: 529 [298]

2009: 412 [174] (to end of Oct.)

Total: 2547 [1449] (in ~4.2 years)

During 2009, Mark also mentored **Emil Betak** (future NNDC consultant compiler), preparing an initial batch of files with 48 selected NP/A papers (chosen from files previously keyworded) and further files containing another 27 NP/A papers

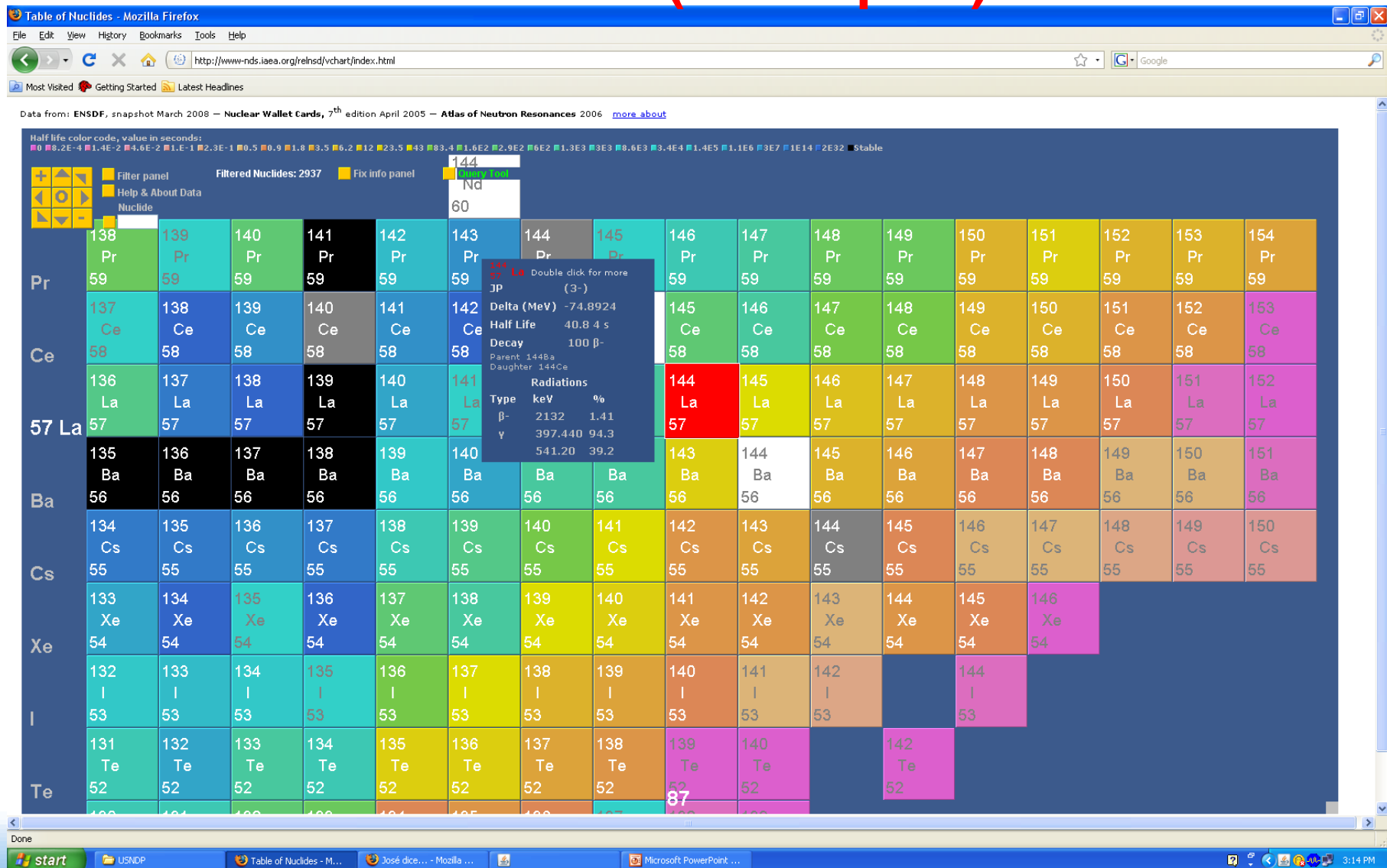
Time was spent explaining/commenting on Emil's keywording

Currently there is a small backlog which will be resolved promptly

NSDD activities in the IAEA

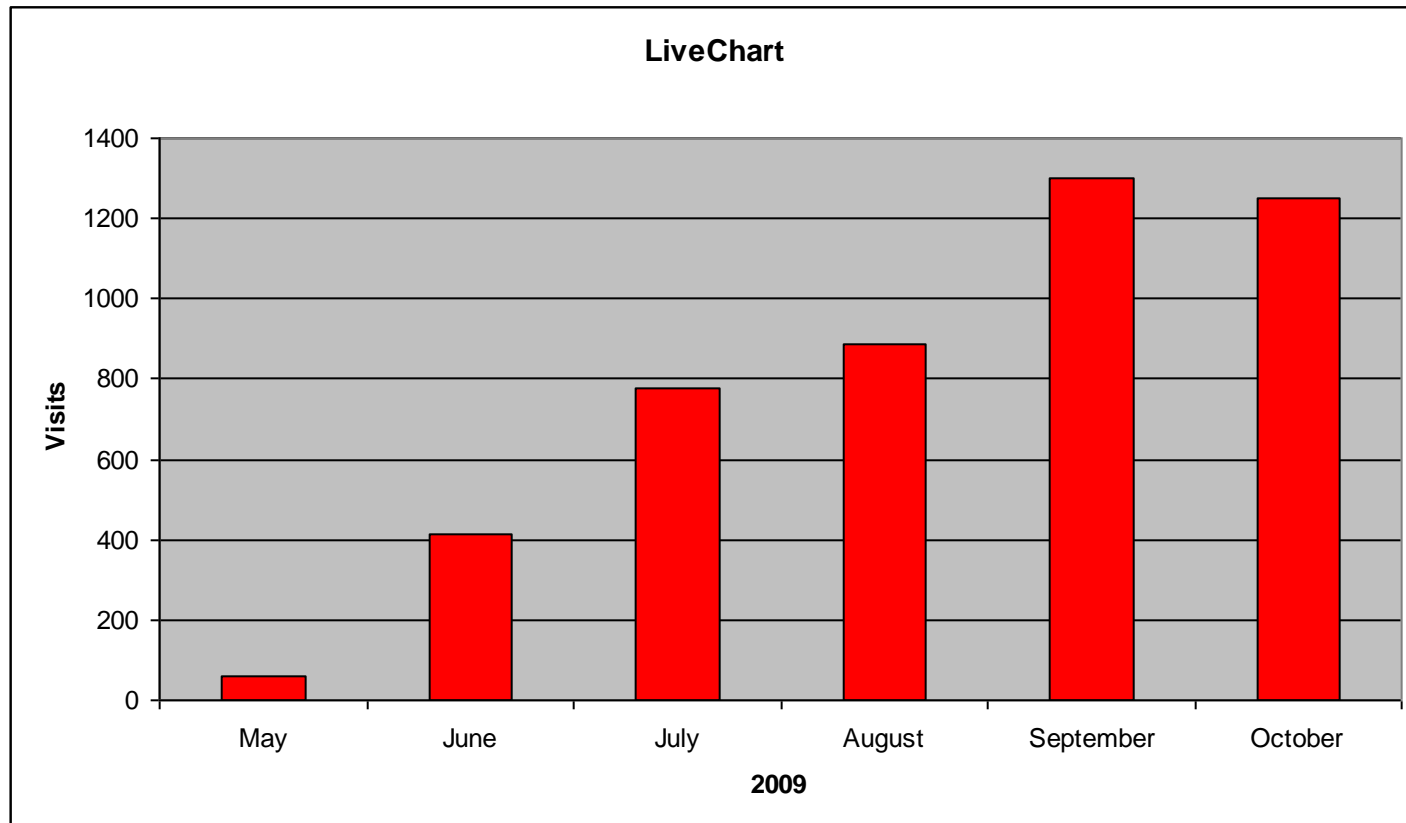
Dissemination (1)

LiveChart (M. Verpelli)



Dissemination (2)

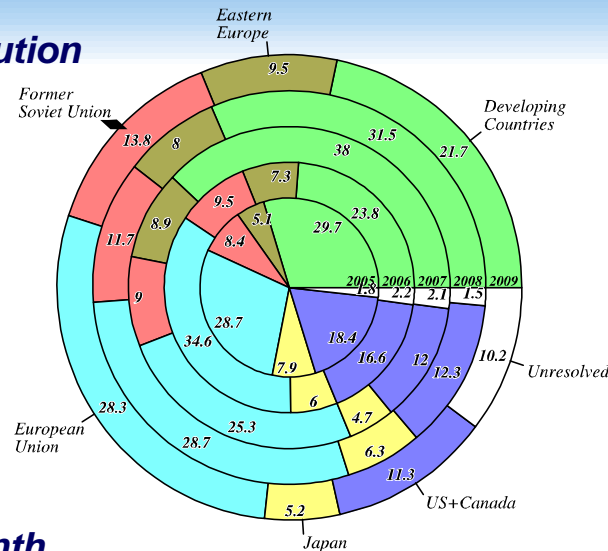
LiveChart (M. Verpelli)



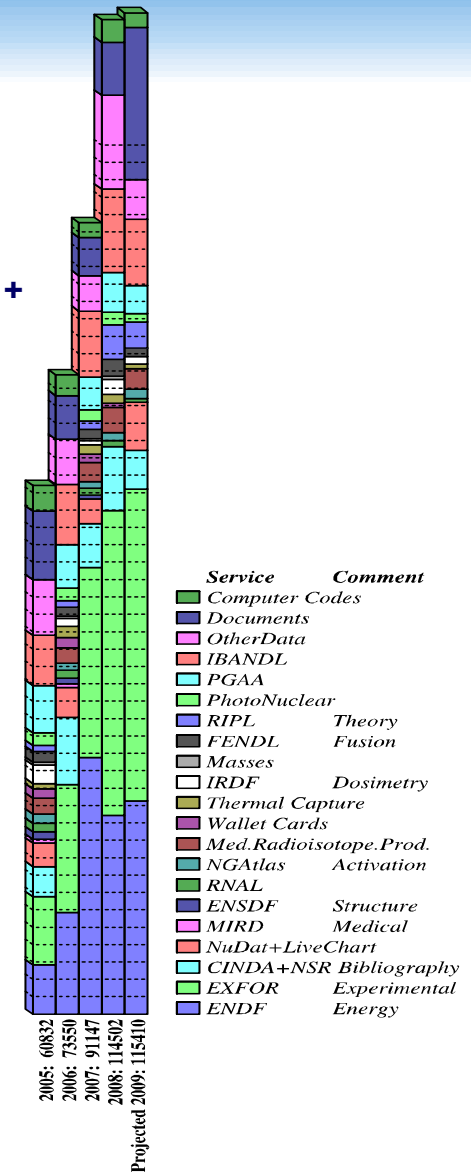
Visits from 1151 cities from 86 countries

NSDD activities in the IAEA

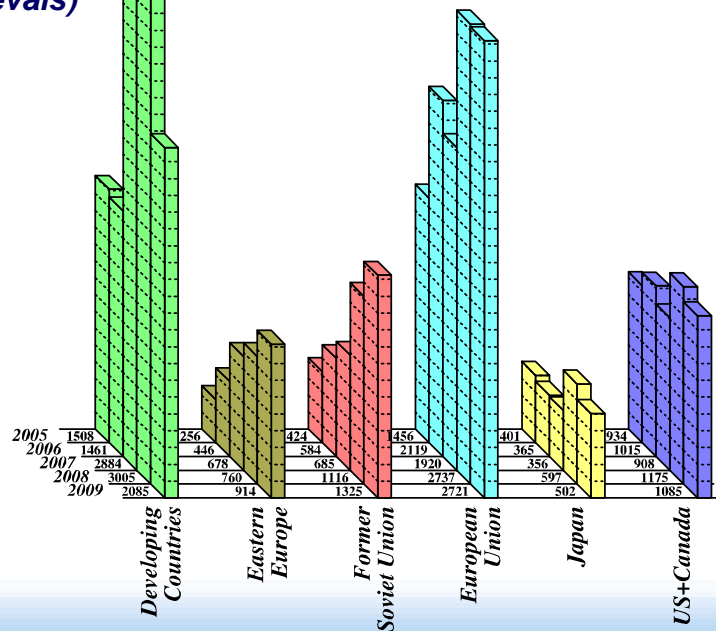
Geographical Distribution (%)



Total per Year (Number of accesses + retrievals)



Average per Month (Number of accesses + retrievals)



Service	Comment
Computer Codes	
Documents	
OtherData	
IBANDL	
PGAA	
PhotoNuclear	
RIPL	Theory
FENDL	Fusion
Masses	
IRDF	Dosimetry
Thermal Capture	
Wallet Cards	
Med.Radioisotope.Prod.	
NGAtlas	Activation
RNAL	
ENSDF	Structure
MIRD	Medical
NuDat+LiveChart	
CINDA+NSR Bibliography	
EXFOR	Experimental
ENDF	Energy



IAEA Commitment to NSDD Activities

Co-sponsored ENSDF-2009 workshop
(11 evaluators trained
A=84 evaluation completed/published)

Individual contracts supporting 4(+1) mass
chains and 1 (+1) horizontal evaluations

Continual running of ICTP workshops

2 staff members dedicating time to ENSDF
evaluation, NSDD coordination and NSR
keywording

Thank you

