NNDC Report

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NNDC Operations

Personnel

- Sujit Tandel (Lowell, MA) joined the NNDC in February 2009, staff position, nuclear structure data (on leave of absence since June 2009)

- Chris Ouellet (McMaster) joined the NNDC in March 2009, postdoc position, nuclear structure data

- Manojeet Bhattacharya left NNDC in July 2009, staff position, NSR

Coordination and reporting

- CSEWG-USNDP Annual Meetings'08 held (Nov2008) Summary and Minutes (web only) issued (Dec 2008)

- USNDP Report FY08 & Workplan FY09 issued (Feb2009)

- USNDP Budget Briefing FY11 held at DOE-SC (Feb2009)

- Work on Report FY09 will start after this meeting

- Work on Work plan FY11 will start early next year

U.S. Nuclear Data Program

Budget Briefing

DOE HQ, Germantown
February 27, 2009

Contents
1. Presentations
2. Accomplishment
3. Activities/Impact Statement
4. Budget Spreadsheet FY11–F15

Nuclear Data Week
at Brookhaven National Laboratory

Cross Section Evaluation
Working Group Meeting
November 4-6, 2008

U.S. Nuclear Data Program
Meeting
November 5-7, 2008
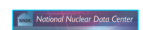
U.S. Nuclear Data Program

NDAG Criticality Safety Meeting
November 3, 2008

GNEP Physics Working Group Meeting
November 6-7, 2008

National Nuclear Data Center
www.nndc.bnl.gov

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Wednesday, November 4, 2009

Databases and Services

Database management

- All NNDC data services migrated from Sybase to MySQL
- NSR, XUNDL, ENSDF, NuDat maintained and distributed regularly
- CSISRS/EXFOR database maintained regularly
- ENDF/B-VII.0 frozen since December 2006, new evaluations in ENDF/A

NNDC Web service, more details in talk by Boris

- Data retrievals increased by 16%; 2.325 million retrievals reached in FY09
- New products
    - Sigma-3.0 released in February 2009 - retrieval of thermal and integral quantities from ENDF
- Active communication with users available for NNDC-general, CSISRS, ENDF, Wallet Cards

Data development

- GForge coming shortly (ENDF/B-VII.1, ENDF-6 manual)
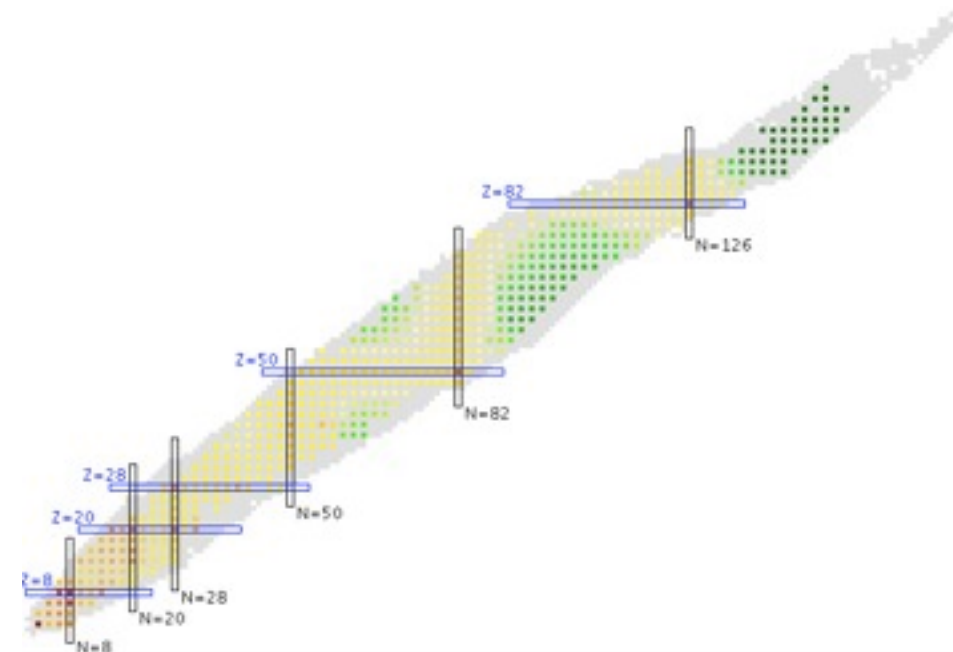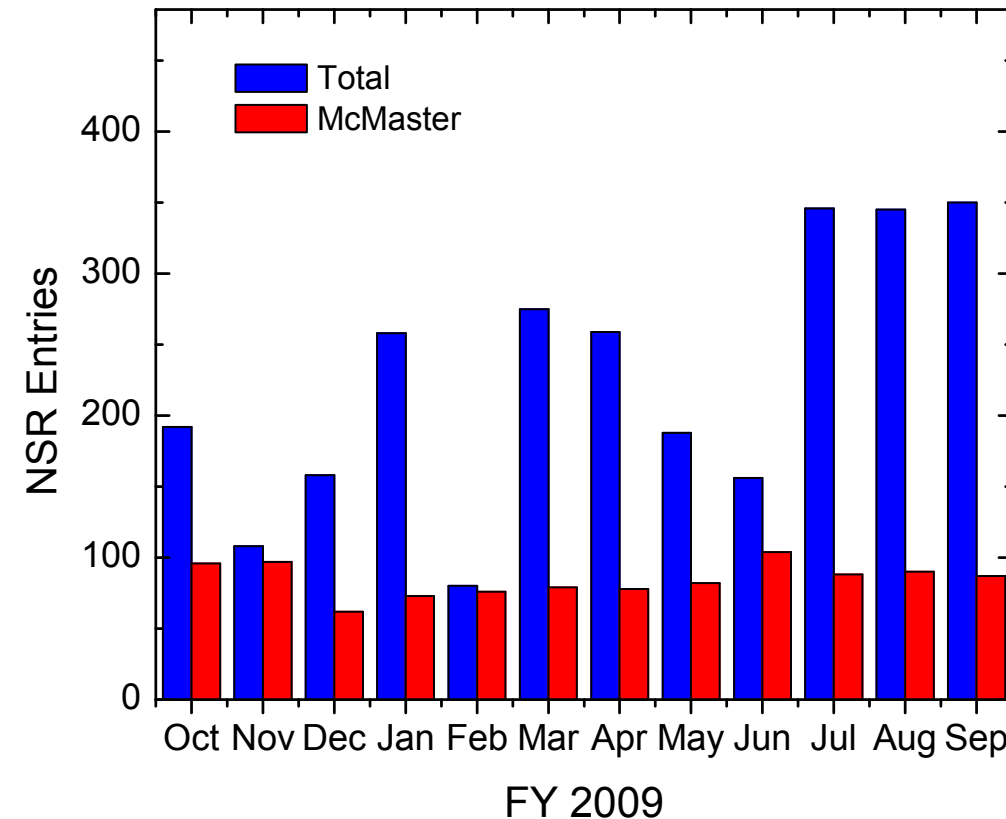
Wednesday, November 4, 2009

Nuclear Structure Data

NSR bibliography compilation, more details in talk by Boris

- 2,715 references compiled (1,588 key-worded, including McM.)

- NSR services migrated from Sybase to MySQL

- Improved, more user friendly, Web interface

NuDat, more details in talk by Alejandro

- NuDat2.5 maintained regularly, more than 1.3M retrievals in FY09 - the most successful Web product (combined with Chart of Nuclides)

ENSDF

11 mass chains completed and submitted (4 NNDC, 7 Collaboration)

NNDC share of nuclides =106, last year= 80

A= **31** (2 nuclides Oullete; *Canada)

A=**32** (6 nuclides Oullete; *Canada)

A=**34** (6 nuclides Nica; *Canada)

A=**66** (13 nuclides, Browne, Tuli)

A=**77** (8 nuclides, Nica; *Canada)

A=**84** (6 nuclides, Sonzogni, Tuli; *Bucharest Group)

A=**103** (13 nuclides, De Frenne)

A=**119** (18 nuclides, Symochko, Browne, Tuli)

A=**147** (16 nuclides, Nica)

A=**163** (10 nuclides, Reich; *Canada)

A=**225** (8 nuclides, Jain, Raut, Tuli; *India)
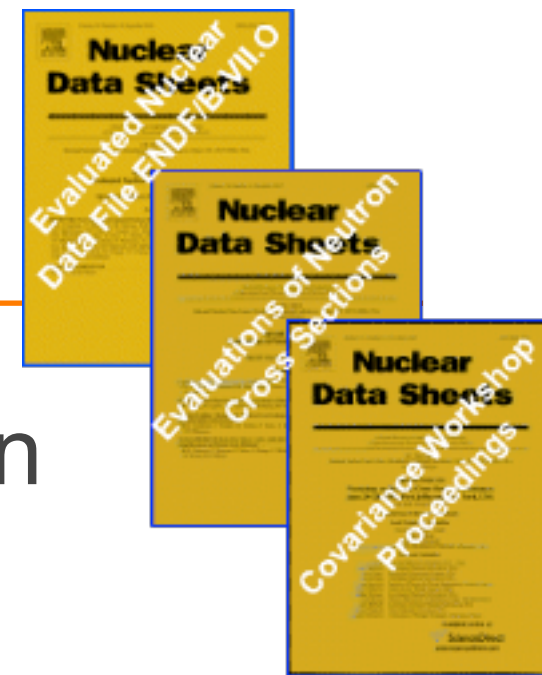
Published 4 mass chains: A=103, 147, 154, 225*

Reviewed 11 mass chains: Browne 3 (72, 178, 204); De Frenne 1 (97); Reich 2 (103, 198), Sonzogni 1(93), Tuli 4 (63, 113, 116, 119)

*collaboration

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Nuclear Data Sheets

- 11 issues published on ENSDF evaluations in 2009, total number of pages 3106

- 1 issue devoted to reaction data, 200 pages
  - RIPL paper
  - Standards paper

- Most cited (according to Scopus)
  - ENDF/B-VII.0: Next Generation ...   145 times
  - EMPIRE: Nuclear Reaction Model...   34 times
  - Nuclear Data Sheets for A = 266-294   13 times
  - Nuclear Data Sheets for A = 132   11 times

- Impact factor 3.404 (Nucl. Phys. A 1.959, Nucl. Phys. B 4.158)

Nuclear Reaction Data

CSISRS compilation (experimental data)

- 126 papers compiled (48-n, 71-cp, 7-γ papers)

Development of EMPIRE, more details in EMPIRE talk

- Additional ejectiles d, t, ^{3}He (including ENDF-6 formatting)

- Improved scripts (some Bash replaced by Python)

- ZVView plotting package upgraded (covariance plots)

- Resonance module extended to allow parameter correlations

- Consistency between thermal cross section uncertainty and resonance parameter uncertainties implemented

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Nuclear Reaction Data

Covariance evaluations, details in talks by Marco and Caleb

- AFCI-1.2 covariance library was created for 110 materials (with LANL): 12 light, 78 structural and fission products, 20 actinides.

- Collaboration with INL on assimilation of ^{23}Na data continued

Covariance processing, more in talks by Ramon

- Processed all new covariance data in ENDF/A

- Processed all 110 files for the AFCI-1.2 covariance file

- Extensive comparison of NJOY and PUFF codes

- Graphical visualization of covariances for most common formats implemented within SIGMA

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