Presentation of the JANIS Software

OECD NEA Data Bank

NRDC 2012

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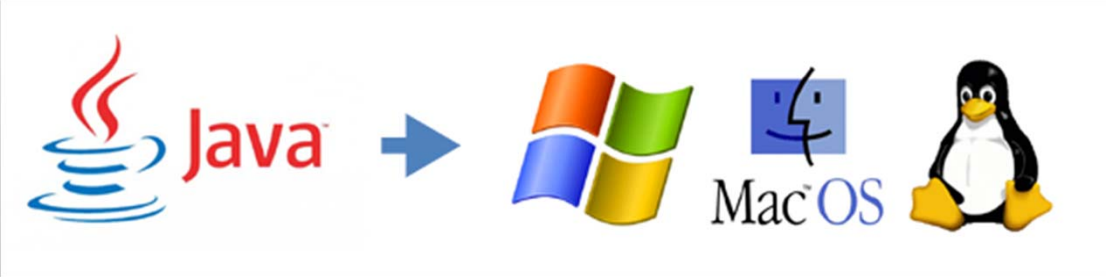
What is JANIS?

JANIS stands for Java-based Nuclear Information Software

Software developed by the OECD Nuclear Energy Agency to facilitate the visualisation and manipulation of nuclear data

Java-based software

- runs on all computers (Windows, Mac OS, Linux),
- requires Java 1.4 or more recent



What is JANIS?

Mainly a **graphical interface** giving access to:

- Bibliographical nuclear reaction data (CINDA)
- Experimental nuclear reaction data (EXFOR)
- Evaluated nuclear reaction and decay data (e.g. JEFF, ENDF/B)
- Basic properties of nuclei (NUBASE)

Supports **several nuclear data formats** as input:

- ENDF and derived formats (PENDF, GENDF)
- Processed covariance formats (BOXER, COVERX)
- EXFOR, CINDA exchange formats

What is JANIS?

Provides ways of **exploring and displaying** content of nuclear data libraries and databases

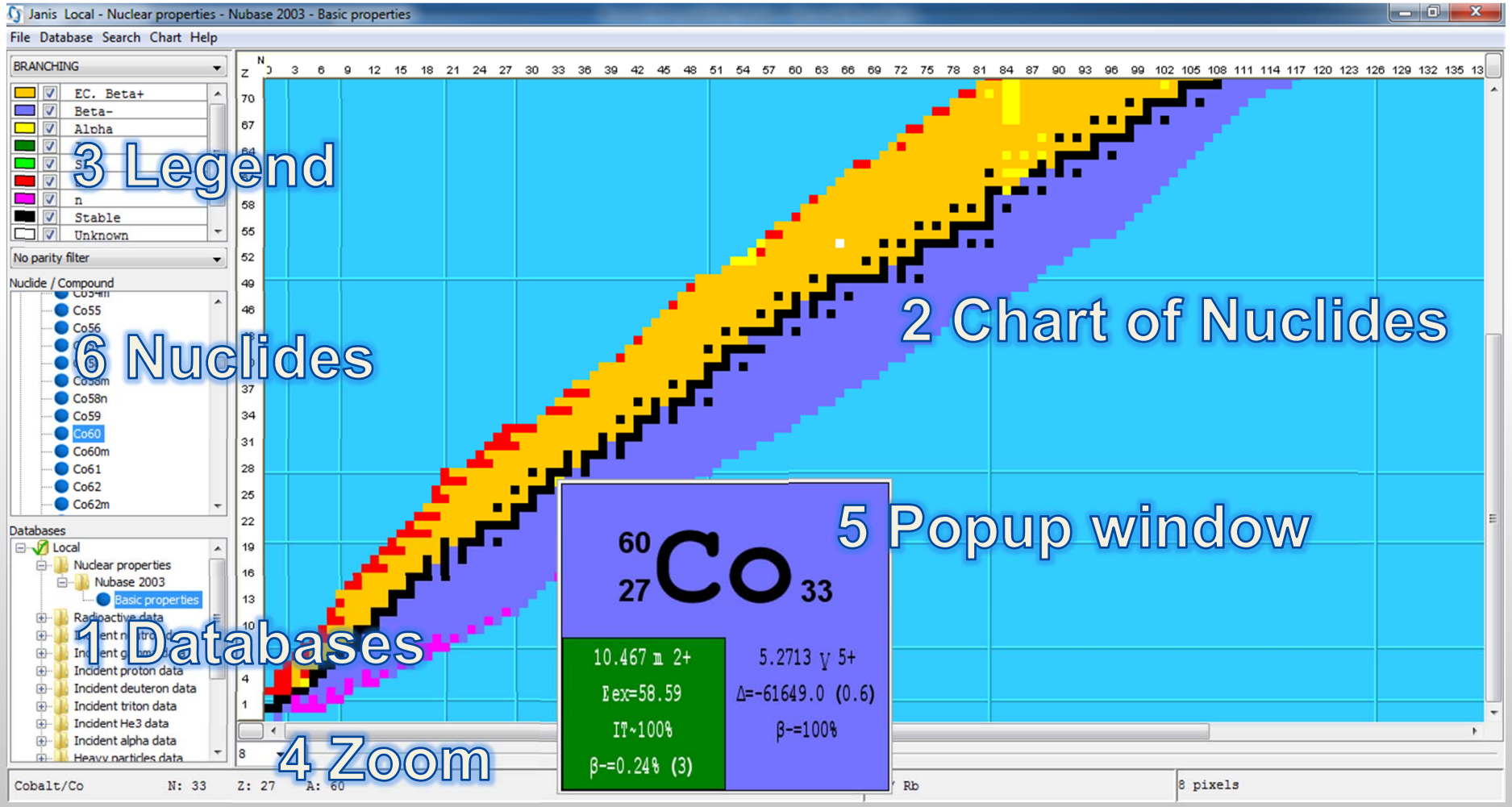
Allows the **visualisation** and **comparison** of data

Allows simple arithmetic operations (normalisation, ratio, product, linear combination) and more complex processing (weighted average of evaluated data)

Plots and numerical values can be **exported** in several formats:

- PNG for images
- WMF/EMF, PS, PDF for vectorial images
- CSV, copy&paste to Excel for numerical values

JANIS overview – Browser window



JANIS overview – Browser window

1. **Database tree**

   To select a database and category of data

2. **Chart of Nuclides**

   The chart depends on the selected database

3. **Chart of Nuclides legend**

   To customise the chart and filter out some nuclei

4. **Zoom controls**

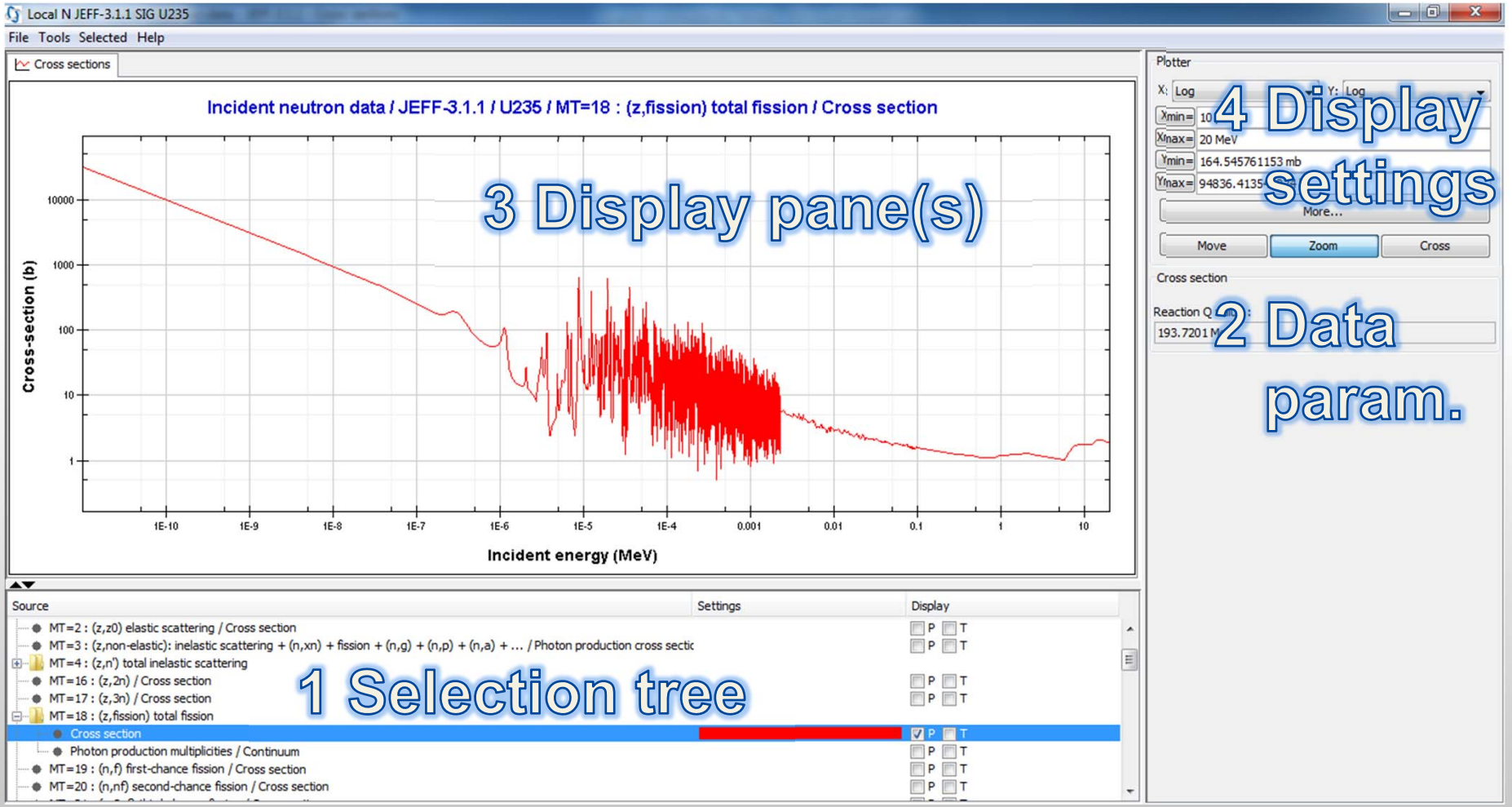
5. **Chart of Nuclides popup**

   To display information on the selected nuclide in a popup window

6. **Nuclide explorer**

   To select a nuclei or compound material

JANIS overview – Renderer window



JANIS overview – Renderer window

1. **Selection tree**

   To select the data you want to display

2. **Data parameters**

   To display additional information on the selected data

3. **Display panes**

   To display textual information, tabulated values, plots, decay paths

4. **Display pane settings**

   To adjust the settings of the plot or table

JANIS overview – Search tools

Browser: visualizing data available, direct access

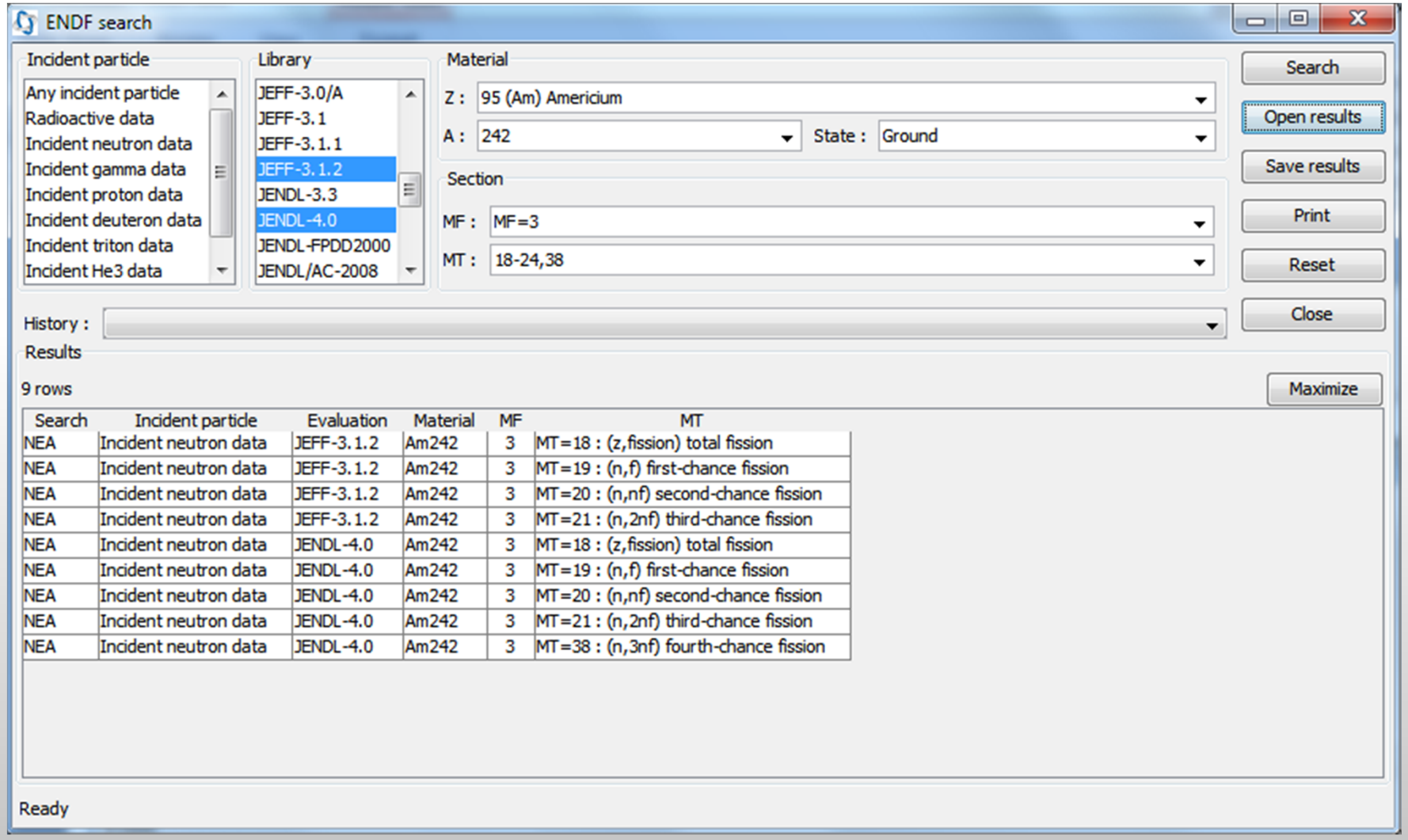
Sometimes more efficient to navigate in JANIS databases using specific search tools to retrieve:

- Bibliographic data (CINDA)
- Experimental data (EXFOR)
- Evaluated data (JEFF, JENDL, etc...)

Two additional evaluated data searches are available for:

- Radiation decay lines (alphas and photons)
- Resonances

JANIS overview – Search tools



JANIS overview – Other functionalities

Data manipulation capabilities (only for evaluated data)

- Computation: basic arithmetic operations (+, -, *, /)
- Weighting: calculation of averaged cross-sections using various weighting spectra and energy group structures

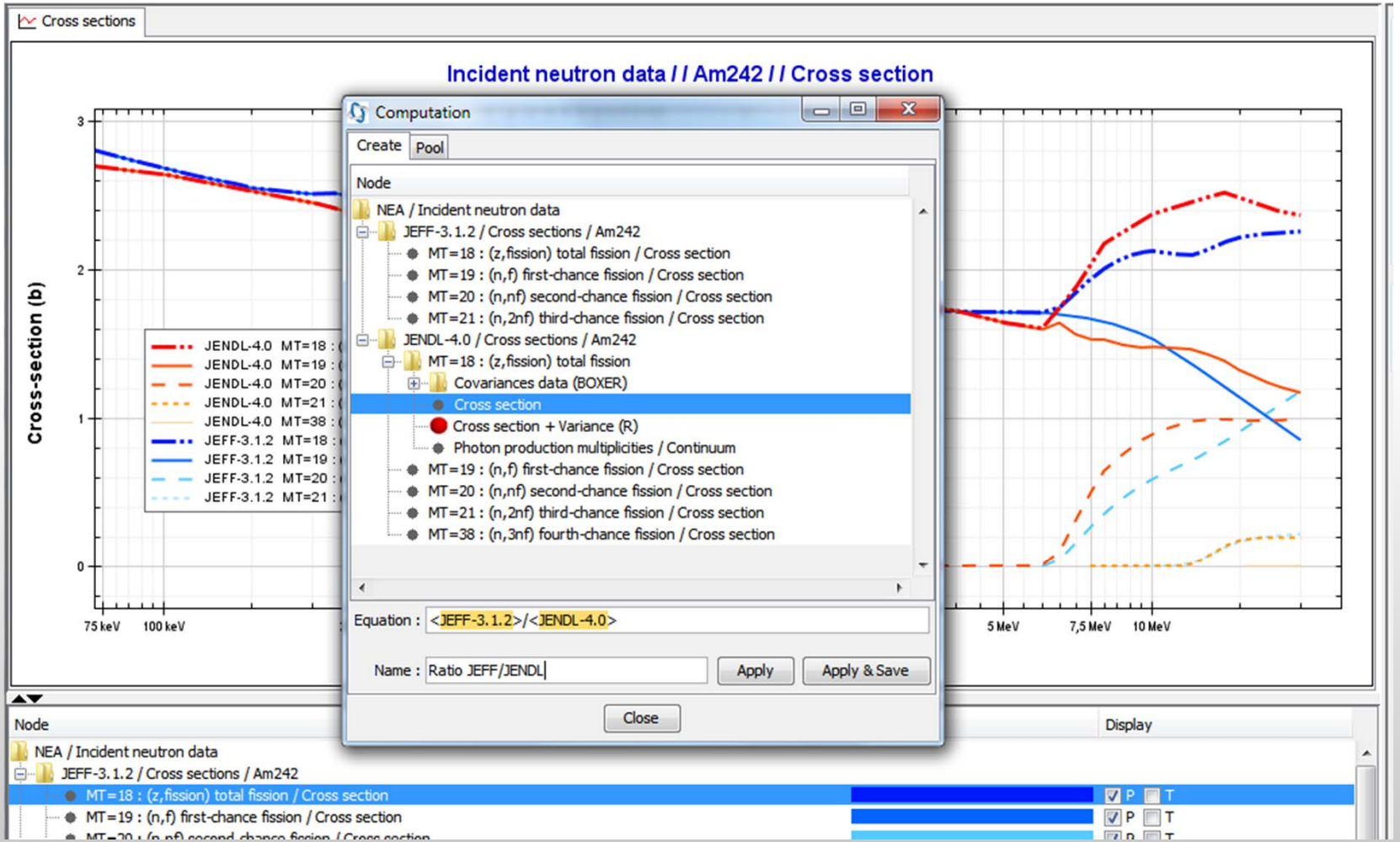
Several ways for **finding comparable data**:

- Pre-initialized searches
- “Compare with Evaluated data” functionality

Display of your **own data**:

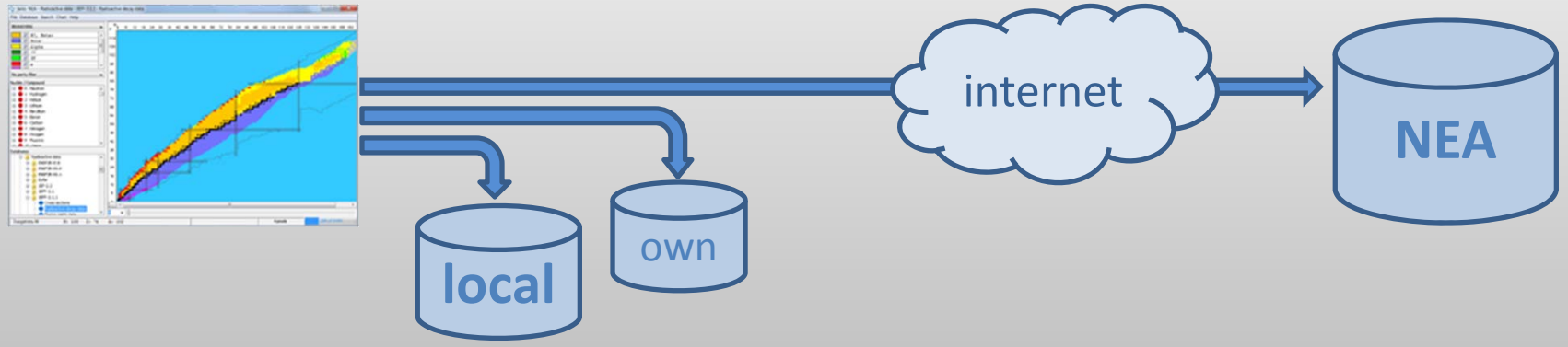
- Using “File > Open...”
- Using “Database > Import Wizard...”

JANIS overview – Computation



JANIS overview - Databases

- Local database
  - No Internet connection required
- Remote database
  - More complete than the DVD provided one
- Personal database
  - Own data (e.g. other processing, new library...)

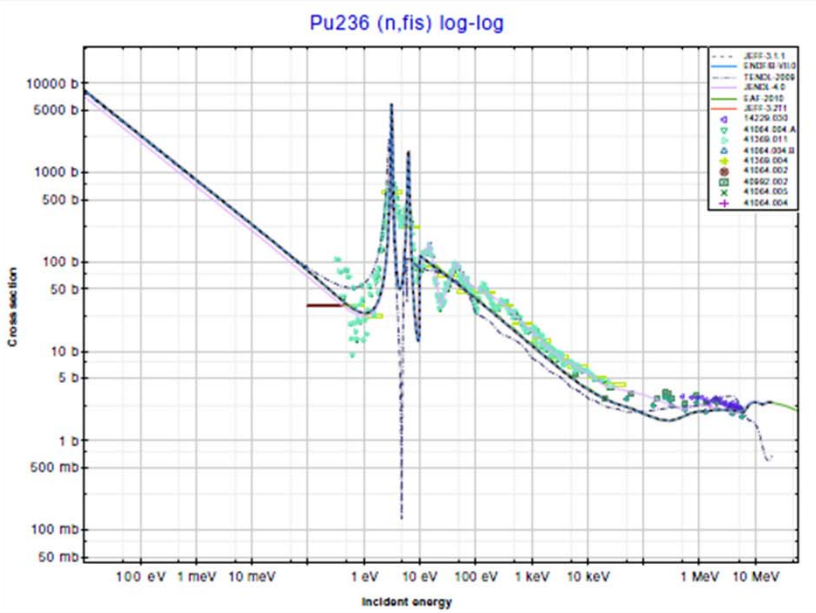


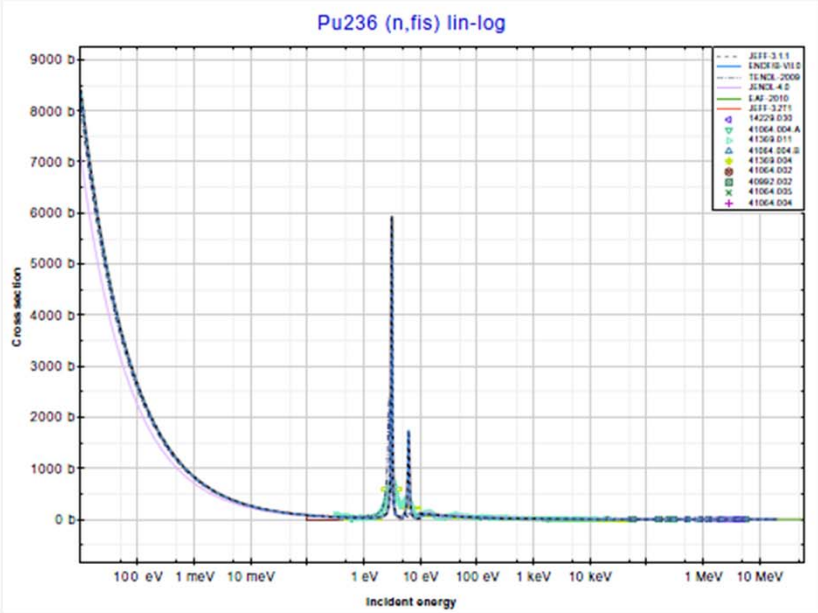
JANIS - Derived tools

- TRANS Checker
  - www.oecd-nea.org/janis/trans-checker/
  - Command line tool (integrated with EXFOR Editor)
- JANIS Books
  - Big PDFs with one page per reaction and plots of all available data or a selection
  - Allow quick visual comparison of many data
- Automatic comparison tools
  - EXFOR with EXFOR
  - EXFOR with ENDF

JANIS – Derived tools : JANIS Books

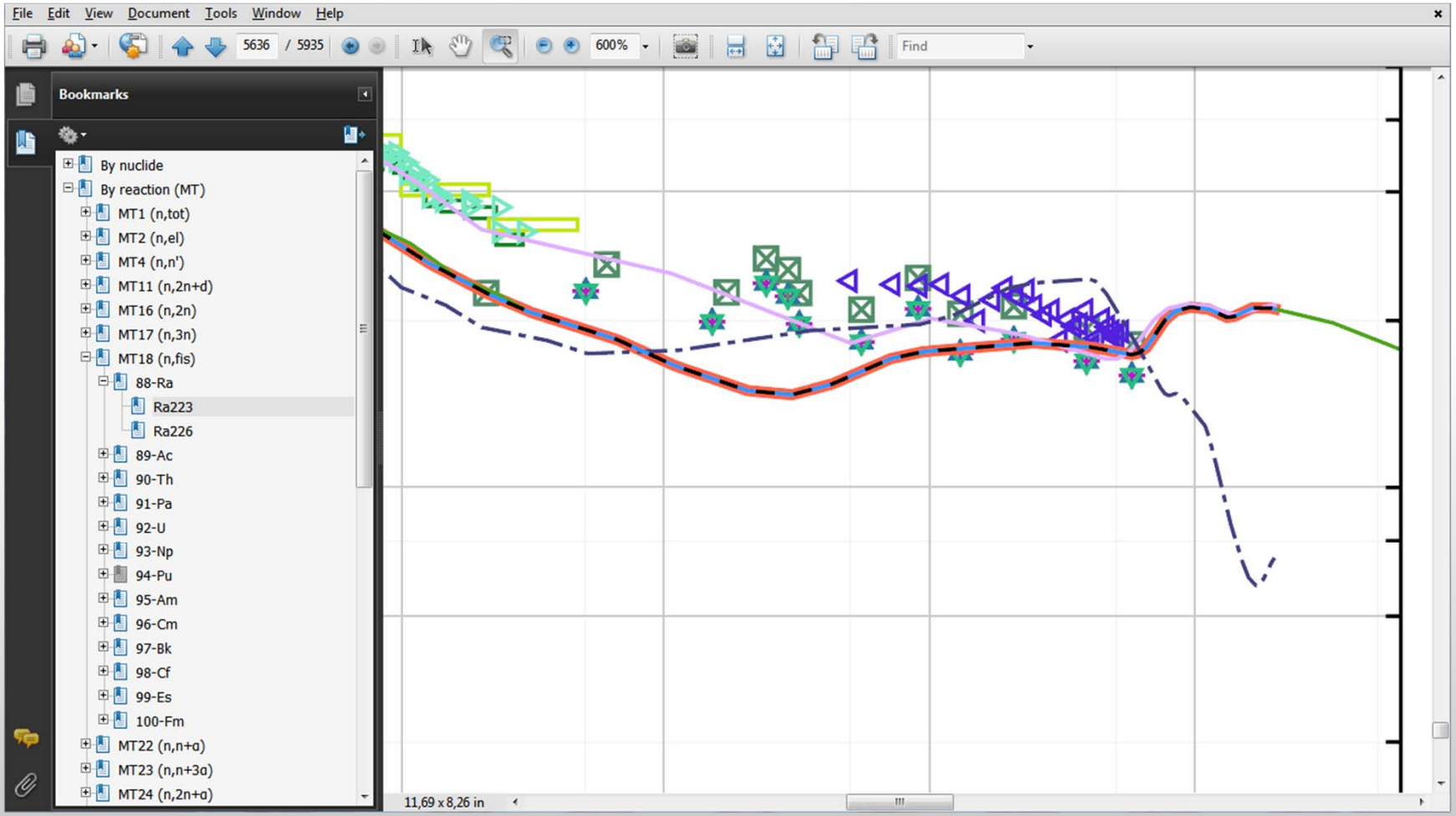
<< 93-Np-239	94-Pu-236	94-Pu-237 >>
<< MT17 (n,3n)	MT18 (n,fis)	MT102 (n,) >>





Library	Sig(2200)	Sig(E0)	Avg-Sigma	G-fact	Res Integ	Sig(Fiss)	Sig(E14)
JEFF-3.2T1	164.798 b	162.882 b	161.89 b	0.99377	949.09 b	2.10094 b	2.54773 b
JEFF-3.1.1	164.824 b	164.703 b	163.8 b	0.99454	949.506 b	2.10094 b	2.54773 b
JENDL-4.0	139.934 b	139.934 b	139.38 b	0.99606	960.335 b	2.36348 b	2.57728 b
ENDF/B-VII.0	164.824 b	164.703 b	163.8 b	0.99454	949.506 b	2.10094 b	2.54773 b
EAF-2010	164.799 b	164.675 b	163.71 b	0.99417	956.028 b	2.10113 b	2.54773 b
TENDL-2009	163.426 b	163.426 b	164.91 b	1.00908	826.885 b	2.68796 b	0.77748 b

JANIS – Derived tools : JANIS Books



More on JANIS

Up-to-date information is available online:

www.oecd-nea.org/janis

- Request or Download a complete DVD with databases
- Launch the latest version using Java Web Start
- Look for information/advices in the JANIS user's guide

Feel free to contact the JANIS team for any questions or feedbacks:

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