# ON NEW FEARTURES OF THE EXFOR-EDITOR

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## Task Definition:

To enhance functionality of the EXFOR-Editor program on preparation of the following information for the EXFOR library:

– exchange files with experimental data of nuclear reactions;

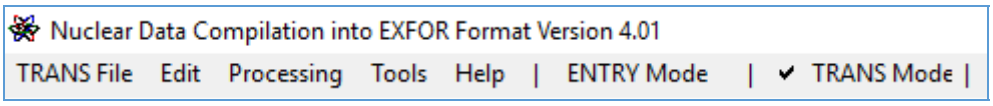
– numerical data on incident neutron spectra, or resolution or response function according to the new EXFOR rules.

## Exchange File Processing

### STEP 1. Switch on the TRANS file edit mode

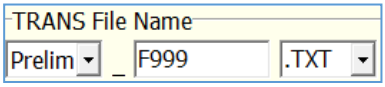

Click the program icon or run **ExfData4_01.EXE** from the program directory to launch the **ExfData**.

To enable the TRANS file edit mode switch on the **TRANS Mode** flag in the menu of the program main window




### STEP 2. Create a new TRANS file (one of possible ways)


Click the **TRANS File** tool button on the tool panel of the main window or select the **TRANS File|New|TRANS File** menu item.

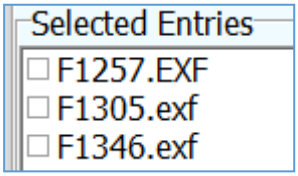



In the **New TRANS** window in the **TRANS Number** field perform the following operations:

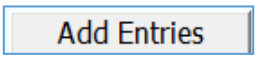
– select a new file type from the drop-down list: **PRELIM** or **TRANS**;

– input a four-character file identification;

– input a filename extension (optional item).




The **Selected Entries** group box initially contains a list of Entries opened in the **ENTRY Mode**.

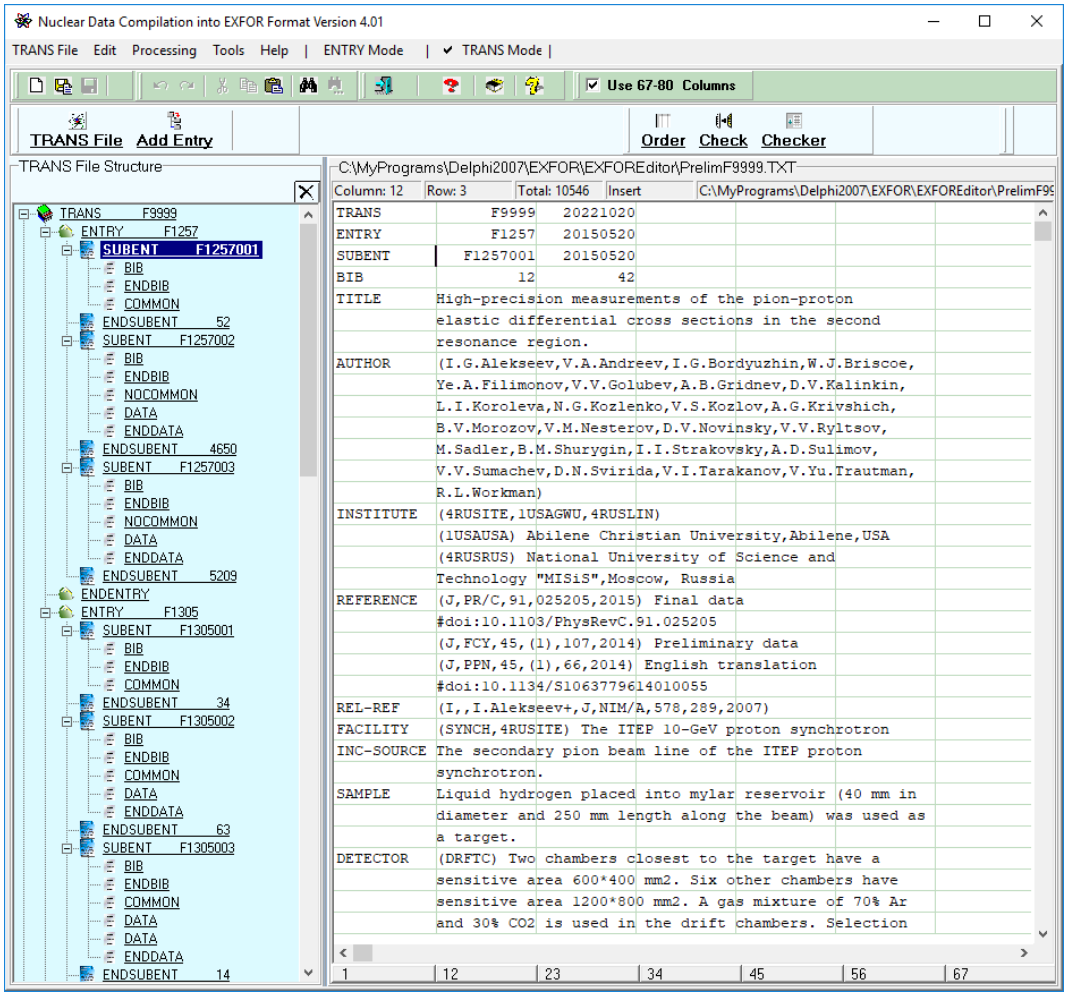



Use the **Add Entries** button to include additional Entries into the list. Then select necessary Entry filenames saved on a hard disk in the **Select Entries for TRANS** window.

Mark ENTRY filenames for a new TRANS in the **Selected Entries** list and click the **OK** button. A new EXFOR Exchange File should be created in the main window of the **TRANS Mode**. Check and correct this file.

## Step 3. Process the EXFOR Exchange File by the Editor

Use a tree structure on the left side of the main window to navigate through the opened EXFOR Exchange File. The tree structure contains a list of Entries, Subentries and Sections of this file.

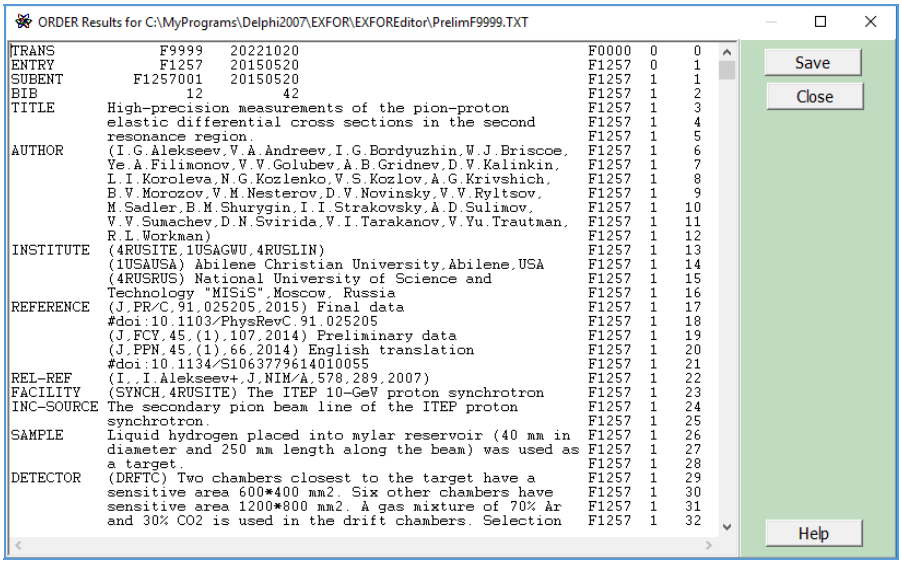




Click the **Add ENTRY** button on the tool panel of the main window or select the **TRANS File|Add Entry** menu item to add Entries to the Exchange File.

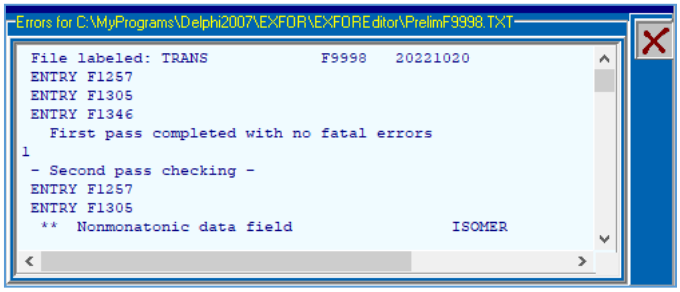
## Step 4. Order the Exchange File records according to the EXFOR rules


Add record identification to the Exchange File according to the EXFOR rules: click the **Order** button on the tool panel of the main window or select the **Processing|Order** menu item. A result of ENTRY ordering is presented on the next Figure.

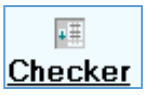



## Step 5. Check the Exchange File according to the EXFOR format rules


Click the **Check** button on the tool panel of the main window or select the **Processing|Check** menu item to launch the **ZChex** program (developed by V.Zerkin, NDS, IAEA).

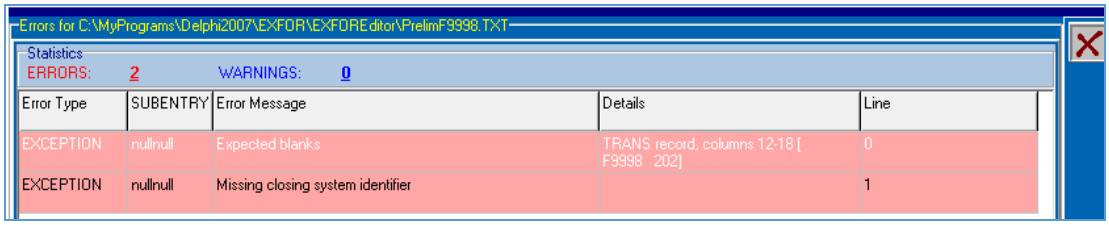



Look through the results shown on the lower panel of the main window and make the necessary corrections. Click on the row containing an error description to highlight the wrong record. Correct all errors and warnings and get the message about zero error.




Click the **Checker** button on the tool panel of the main window or select the **Processing|Checker** menu item to launch the **Trans Checker** program (developed by N.Soppera, NEA Data Bank).

The results are shown in the table on the lower panel of the main window. Click on the row containing an error or warning description to highlight the wrong record. Correct all errors and warnings and get the message about zero error.

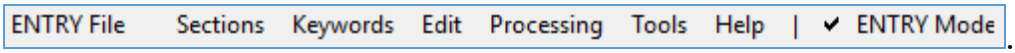



After correction of all errors, the exchange file is ready for the EXFOR library.

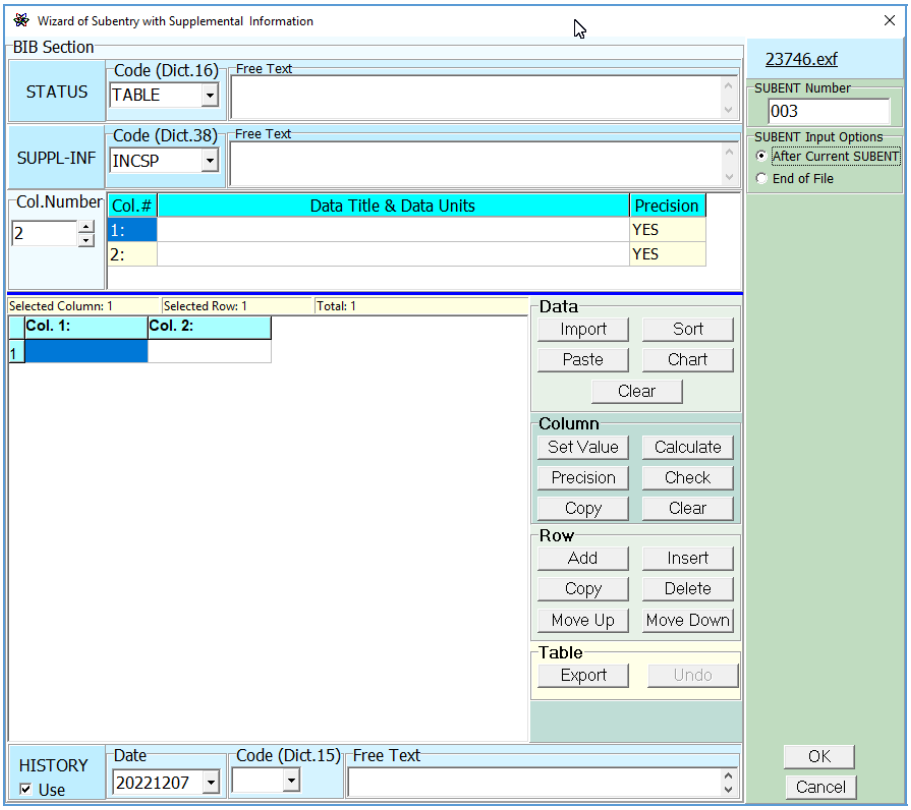
## Processing of Numerical Data on Incident Neutron Spectra, Resolution or Response Function according to the New EXFOR Rules

### Step 1. Use the pattern mode to create SUBENTRY with the SUPPL-INF keyword

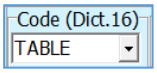

Click the **SUBENTRY SUPPL-INF** button on the tool panel of the main window or select the **Sections|Subentry SUPPL-INF** menu item in the **ENTRY** mode of the EXFOR-Editor:



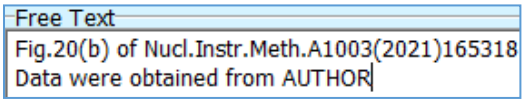

The next window there will appear:



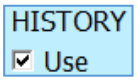

## Step 2. Input of data for the SUPPL-INF Subentry keywords



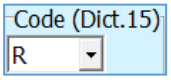

Select a code from the drop-down list of the **Code** field for the **STATUS** keyword.



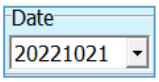

Input additional information into the **Free Text** field if necessary.



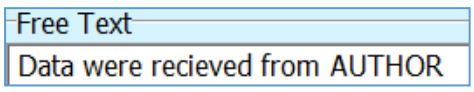

Switch on the **Use** flag to enable the **HISTORY** keyword use.




Select a code from the drop-down list of the **Code** field .

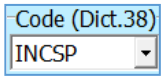



Input the date of the SUBENTRY creation into the **Date** field .

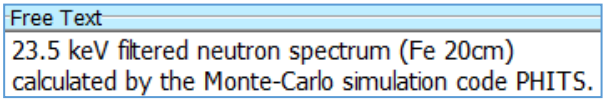



Input additional information into the **Free Text** field, if necessary.

## Step 3. Input of data for the SUPPL-INF keyword

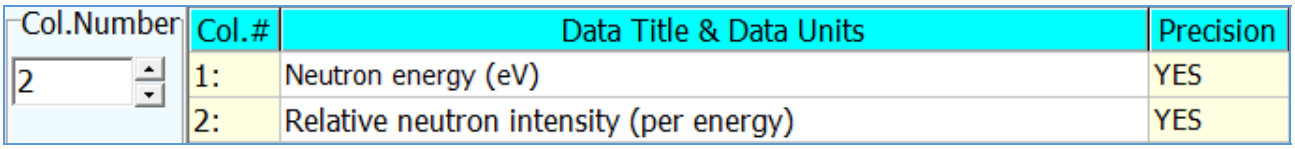



Select a code from the drop-down list of the **Code** field.



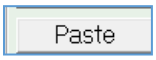

Input additional information into the **Free Text** field, if necessary.

Set the number of numerical data columns in the **Col.Number** field. Input the data titles and their units for every numerical data column in free text into the **Data Title & Data Units** column.

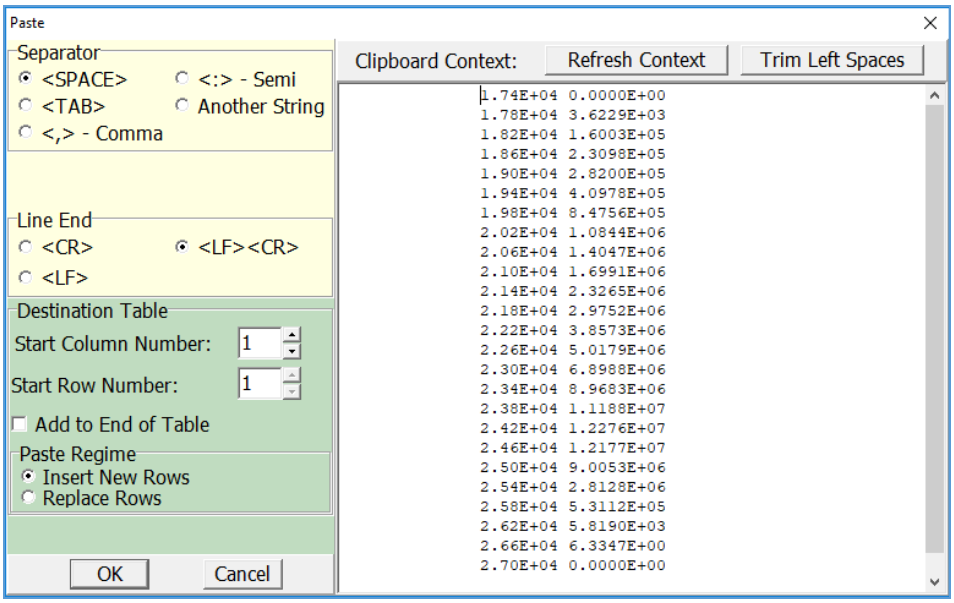



Set the **YES** code in the **Precision** column to enable numerical data formatting with precision setting. Set the **NO** code to save the author's numerical data presentation.

Use the **Data Table** mode to input numerical data for the **SUPPL-INF** keyword.

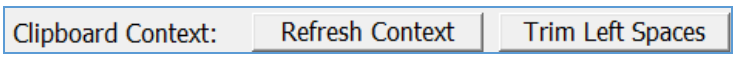



Select data in any file and put them into the clipboard (**Copy**). Use the **Paste** button on the **Data** panel.




Set the following options for numerical data input in the **Paste** window: chars used as data separators in text (group-box **Separator**), chars used as signs of the line end (group-box **Line End**), column number and row number for the beginning of data insertion (fields **Start Column Number** and **Start Row Number**). Switch on the **Add to End of Table** flag to add numerical data to the end of the table.

Click the **Refresh Context** button on the **Clipboard Context** panel to refresh the representation of the clipboard context on the screen. Click the **Trim Left Spaces** button to delete left spaces in every line of the clipboard context.

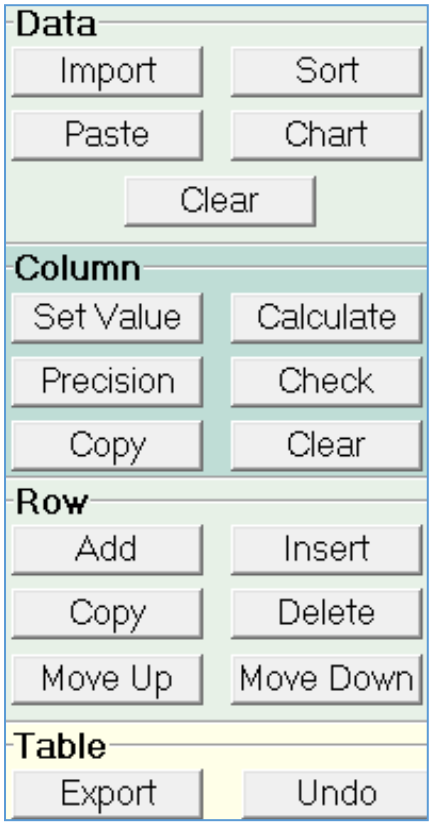



Click the **OK** button to rewrite numerical data from the clipboard to the table.

## Step 4. Processing of numerical data

All operations of the **Data Table** mode are available for processing of the **SUPPL-INF** numerical data.

The **DATA** panel contains the following buttons:




– **Import** – to import numerical data from text files, Word or Excel files;

– **Paste** – to paste numerical data from the clipboard;

– **Clear** – to clear data table;

– **Sort** – to sort numerical data by columns in ascending order;

– **Chart** – to present numerical data in graphical output;

The **Column** panel contains the following buttons to process the selected column:

– **Set Value** – to input a constant value;

– **Calculate** – to make calculations with numerical data;

– **Precision** – to set format and precision of numerical data;

– **Check** – to check correctness of numerical data;

– **Copy** – to copy data from one column to another;

– **Clear** – to clear numerical data from the column.

The **Row** panel contains the following buttons to process the data from rows:

– **Add** or **Insert** – to input row at the end of table or at selected position;

– **Copy** – to make a copy of selected row;

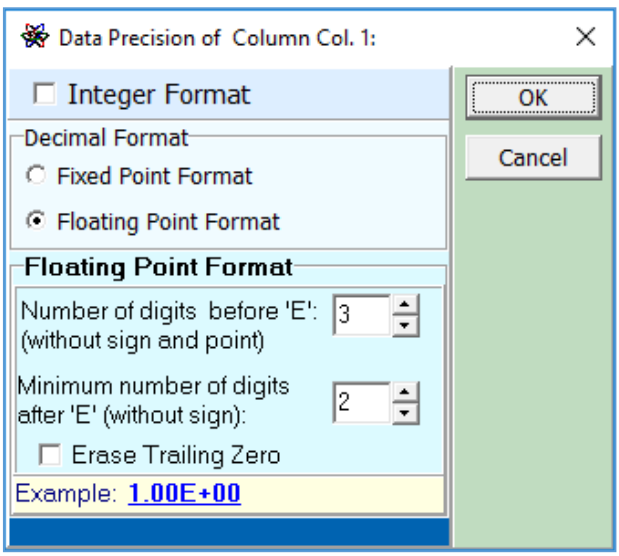
– **Delete** – to delete rows;

– **Move Up** or **Move Down** – to move the selected row up or down by one position.

The **Table** panel contains the following buttons:

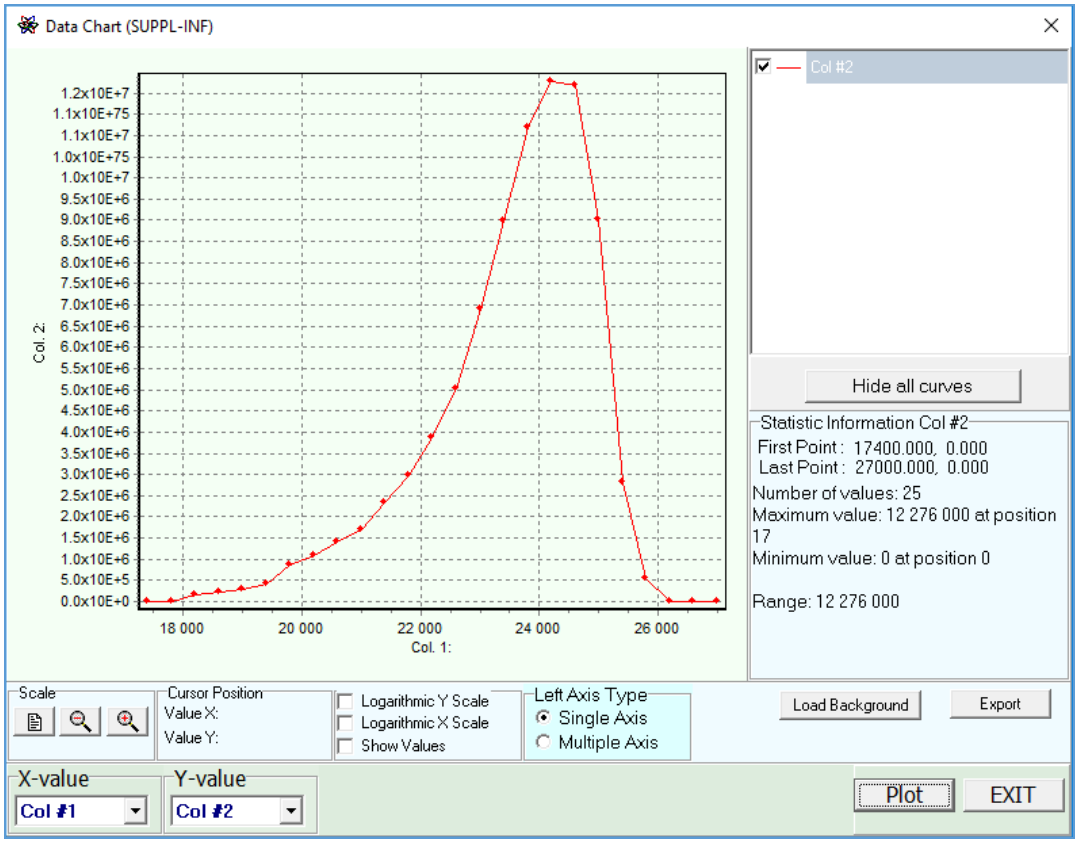
– **Undo** – to cancel the last operation with numerical data;

– **Export** – to export numerical data into a text file or Word or Excel table.

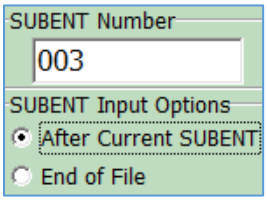



The format and precision are set for the numerical data from the whole of the selected column. Numerical data could be presented as integer values or fractional decimal values (with fixed or floating point).

Use graphic presentation for additional check of numerical data. Select the table columns for axes to make a plot in the **Data Chart (SUPPL-INF)** window and click the **Plot** button.




## Step 5. Insert SUPPL-INF SUBENTRY into the ENTRY

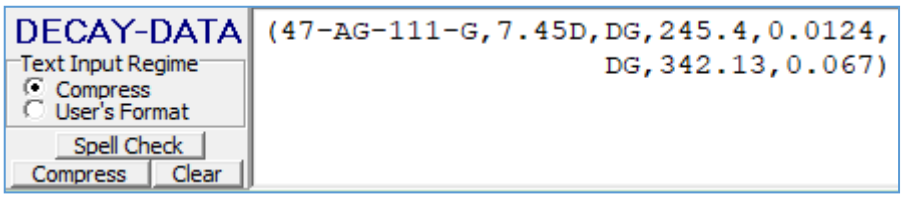



Set the subentry number in the **SUBENT Number** field and determine the place of the **SUPPL-INF** subentry insertion in the **SUBENT Input Option**s group-box: right after current subentry or at the end of the entry. Click the **OK** button.


Repeat **steps 3 ÷ 5** to input the **SUPPL-INF** keyword information separately (the **SUPPL-INF** button on the tool panel of the main window or **Keywords|Physics|SUPPL-INF** menu item).

## Additional comments on some corrections

Use the **User's Format** option in the **Text Input Regime** group-box to save the author's formatting of text information for input of keywords data (all spaces will be saved).




Text will be inserted without any transformation

| | | | |
|---|---|---|---|
| DECAY-DATA | (47-AG-111-G,7.45D,DG,245.4,0.0124, | | |
| | | DG,342.13,0.067) | |

This option is available for all keywords.