

Validation of a Format of Data Input to the EXFOR Data Library by EXFOR-Editor

Guide for EXFOR Compilers

August 27-30, 2013, IAEA, Vienna, Austria

G. Pikulina, S. Taova

Russian Federal Nuclear Center-VNIIEF

Russia, 607188, Sarov, Nizhnij Novgorod region, pr. Mira, 37

■ **Control of numerical data input:**

- data validation;
- precision assignment of numerical data;

■ **Verification of numerical data:**

- Control of equal values of numerical data along abscissa;
- Graphic presentation of numerical data;

■ **Common checking procedures of EXFOR data format input:**

- Spell-checking;
- ZChex checking;
- TRANS Checker checking.

Data Table Selected Column: 1 Selected Row: 3

	ANG-CM	DATA-CM	DATA-ERR
1	ANG-CM	DATA-CM	DATA-ERR
2	ADEG	NO-DIM	NO-DIM
3	47.898	0.99350	
4	52.089	1.0118	
5	54.979	1.0400	
6	58.014	1.0305	
7	61.049	1.0592	
8	63.939	1.0116	
9	66.974	1.0591	
10	69.864	1.0590	
11	73.043	0.97506	
12	75.934	1.0589	
13	77.958	1.2263	
14	80.992	1.0207	
15	84.026	0.86530	
16	87.928	0.82646	
17	90.095	0.68162	
18	91.973	0.66310	
19	97.898	0.52235	
20	102.95	0.38236	0.33515E-01
21	108.01	0.28247	0.22384E-01
22	112.92	0.22251	0.23195E-01
23	117.98	0.19037	0.19843E-01
24	121.88	0.12033	0.10547E-01
25	127.08	0.90538E-01	0.11639E-01
26	130.98	0.70025E-01	0.78720E-02
27	135.90	0.49412E-01	0.71349E-02

Current Subentry
D0998008

DATA

Import Sort
Paste Chart
Clear All **Check**

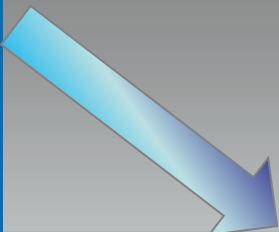
Column

Options for DATA Testing

Column Name	Absolute Value	Minimum Check	Include Minimum	Minimum Value	Maximum Check	Include Maximum	Maximum Value
E-LVL2	NO	YES	YES	0	NO	NO	10000
ANG-CM	YES	YES	YES	0	YES	YES	180
DATA-CM	NO	NO	NO	0.0001	NO	NO	10000
DATA-ERR	YES	YES	NO	0	NO	NO	10000

Undo

Table



Options for DATA Testing

Column Name	Absolute Value	Minimum Check	Include Minimum	Minimum Value	Maximum Check	Include Maximum	Maximum Value
E-LVL2	NO	YES	YES	0	NO	NO	10000
ANG-CM	YES	YES	YES	0	YES	YES	180
DATA-CM	NO	NO	NO	0.0001	NO	NO	10000
DATA-ERR	YES	YES	NO	0	NO	NO	10000



Wrong Value

ATTENTION! Correct wrong value (Absolute value in column ANG-CM must be ≥ 0 . ≤ 180 .)

New Value:

Data Table Selected Column: 1 Selected Row: 3

	EN	E-LVL	ANG-CM	DATA-CM	DATA-ERR
1	EN	E-LVL	ANG-CM	DATA-CM	DATA-ERR
2	MEV	MEV	ADEG	MB/SR	MB/SR
3	7.0	0.0000	11.111	19.648	
4	7.0	0.0000	17.620	21.900	3.7514
5	7.0	0.0000	34.123	14.455	
6	7.0	0.0000	55.881	5.0182	
7	7.0	0.0000	76.472	2.0407	0.27973
8	7.0	0.0000	96.495	1.0416	
9	7.0	0.0000	116.04	1.6896	
10	7.0	0.0000	134.94	1.6233	
11	7.0	0.0000	152.62	1.0401	0.15432
12	7.0	2.3650	10.487	23.170	
13	7.0	2.3650	16.966	18.486	2.9313
14	7.0	2.3650	33.975	4.6322	
15			56.435	5.2082	
16			77.631	2.3282	0.37694
17			98.242	1.1039	
18			117.11	0.73790	
19			136.02	0.76708	0.11785
20			153.14	0.69509	
21			11.022	17.208	
22			17.037	20.209	
23			23.039	19.216	2.6834
24			28.428	14.646	
25			33.800	8.4239	
26			36.796	7.5415	
27			51.122	1.7723	
28			65.562	2.7578	0.36213
29			81.781	2.9581	
30			97.374	2.0800	
31			111.76	1.2963	

Current Subentry
F0806004

DATA
Import Sort
Paste Chart
Clear All Check

Column
Add Insert
Copy Delete
Rename
Move Left Move Right
Calculations
Set Value
Set Precision

Row
Add Insert
Copy Delete
Move Up Move Down

Undo
Undo Last Action

Table
Precision for Table
Export Data Table
Add Data Table
Cancel
EXFOR-Help
Help

Set Precision for DATA Table

COLUMNS	
EN	
E-LVL	
ANG-CM	
DATA-CM	
DATA-ERR	

Precision for E-LVL

Fixed Point Format
Number of Digits after Decimal Point: 4
 Erase Trailing Zero
Example: 0.0001

Use Scientific Format if
Absolute Value >: 999.00
Absolute Value <: 0.0001

Scientific Format
Total Number of Digits before Exponent (including one before decimal point): 6
 Erase Trailing Zero
Example: 0.0001 E+01

Default Values
Load
Save

OK
Cancel
Help

Data Table Check For Equal Abscissa [X]

T0242.EXF [OK]

Options

Choose SUBENTRY for data check: SUBENTRY 002

Check Options Add Flag Column For Equ

Choose Table Columns for Equal Abscissa Checking

Abscissa axis (X)

EN

Invariable parameter 1

ANG-CM

Invariable parameter 2

Data Table Check For Equal Abscissa [X]


T0242.EXF [OK]

Options	Data Table			
1	ANG-CM	EN	DATA-CM	FLAG
2	ADEG	MEV	MB/SR	NO-DIM
3	90.0	6.90	36.	
4	90.0	6.92	35.	
5	90.0	6.95	32.	
6	90.0	6.96	32.	
7	90.0	6.98	25.	1
8	90.0	6.98	18.	1
9	90.0	7.02	16.	
10	90.0	7.06	13.	
11	90.0	7.10	10.	
12	90.0	7.13	4.	
13	90.0	7.15	5.	
14	90.0	7.17	5.	
15	90.0	7.19	5.	
16	90.0	7.23	3.	
17	90.0	7.89	21.	
18	90.0	7.91	25.	
19	90.0	7.93	30.	
20	90.0	7.94	33.	
21	90.0	7.97	31.	
22	90.0	7.99	31.	2
23	90.0	7.99	37.	2
24	90.0	8.01	39.	
25	90.0	8.03	34.	

Save Flag

Rewrite so

Error

 ATTENTION! Equal X-values were found.

[OK]

EXFOR new file | EXFOR wizard | **Sort** | **Chart** | Che...

Add Curves to Chart

Select Subentry: SUBENTRY 004

Invariable Parameters
 Parameter 1: EN | Parameter 2: E-LVL

Abscissa axis
 X-value: ANG-CM | Type Error: Symmetric Unsymmetric | Error: Error

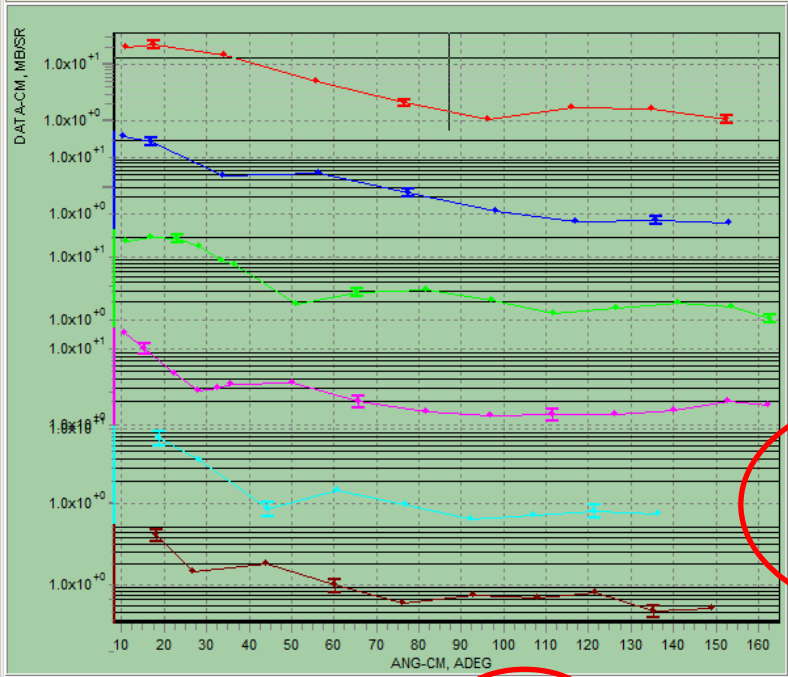
Ordinate axis
 Y-value: DATA-CM | Type Error: Symmetric Unsymmetric | Error: DATA-ERR

OK | Cancel

Data Plotting

Information about Chart
 Reaction: [6-C-12[D,N]7-N-13.PAR.DA]

Status: [CURVE]Fig.4



- EN: 7.0; E-LVL: 0.0000
- DATA-ERR(7.0;0.0000)
- EN: 7.0; E-LVL: 2.3650
- DATA-ERR(7.0;2.3650)
- EN: 9.1; E-LVL: 0.0000
- DATA-ERR(9.1;0.0000)
- EN: 9.1; E-LVL: 2.3650
- DATA-ERR(9.1;2.3650)
- EN: 13.0; E-LVL: 0.0000
- DATA-ERR(13.0;0.0000)
- EN: 13.0; E-LVL: 2.3650
- DATA-ERR(13.0;2.3650)

Statistic Information EN: 9.1; E-LVL: 2.3650

First Point: 10.642, 16.193
 Last Point: 162.450, 1.836

Number of values: 15
 Maximum value: 16.193 at position 0
 Minimum value: 1.315 at position 9

Range: 14.878

Add Curves
 Delete Curves

Scale of Axes

X Axis
 Minimum: 10.487 | Maximum: 162.8 | Increment: 0
 Minor Tick Count: 3

Labels
 Value Format: #,###.###

Y Axis
 Minimum: 0.88578 | Maximum: 25.651 | Increment: 0
 Minor Tick Count: 8

Labels
 Value Format: #.0'x10'E+0## Exponential

OK | Cancel

Scale | Marker Position
 Value X: 87.216 | Value Y: 13.072

Logarithmic Scale | Show Values

Left Axis Type
 Single Axis
 Multiple Axes

Change Axes Scale | Print | Export | EXIT

Nuclear data compilation into database EXFOR

File Section input Keyword input Edit Processing Tools Help

Renummer Subentries before Ordering
 Use 67-

EXFOR new file EXFOR wizard EXFOR Dummy Sort Chart Check Order Checkel **Spell Check**

TITLE AUTHOR INSTITUTE REFERENCE FACILITY INC-SOURCE DETECTOR SAMPLE METHOD ANALYSIS ERR-ANALYS REACTION CL

DECAY-DATA HALF-LIFE PART-DET ADD-RES MONITOR MONIT-REF REL-REF COMMENT CRITIQUE FLAG STATUS

SUBENTRY001 SUBENTRY001-wizard SUBENTRY SUBENTRY-wizard COMMON DATA 'C' in ENTRY Title (11th Col) 'C' in current SUBENTRY Title

EXFOR File Structure

- BIB NOCOMMON
- SUBENT F1107002
 - BIB COMMON
 - DATA
- SUBENT F1107003
 - BIB COMMON
 - DATA
- SUBENT F1107004
 - BIB COMMON
 - DATA
- SUBENT F1107005
 - BIB COMMON
 - DATA
- SUBENT F1107006
 - BIB COMMON
 - DATA
- SUBENT F1107007
 - BIB COMMON
 - DATA

Column: 26 Row: 14 Total: 510 Insert C:\MyPrograms\Exfor\NewProject\F1107.EXF SUBENTRY F

F1107.EXF

Spell Checker

ENTRY NOT in Dictionary

SUBENT **Neutron**

BIB

TITLE Replace with

AUTHOR **Neutron**

INSTITUTE

REFERENCE Choices

- Neutron
- Negron
- Neuron
- Norton
- Natrona
- Neutrons
- Nitro

FACILITY

DETECTOR (LONGC,BPAIR) Neutron yield was monitored either by a long counter or by a neutron discriminating scintillation counter using a small stylbene crystal. The angular resolution of the neutron counter was negligibly small because the flight path was from 1.5 to 3.5 m long.

ator was groups

The ng 4 ns.

Replace

Ignore

Cancel

EXFOR new file
EXFOR wizard
Sort
Chart
Check
Order
Checker

Column: 1 Row: 6 Total: 1026 Insert C:\MyPrograms\Exfor\NewProjct\F0072.exf SUBENTRY F0072001 BIB section

F0072.exf

AUTHR	(J.B.A.England, L. Zybert, G.T.A.Squier, O.Karban, R. Zybert,	F0072	1	5
	J.M.Nelson, D.Barker, B.R.Fulton, M.C.Mannion, C.A.Ogilvie,	F0072	1	6
	L.Potvin, C.Pinder, C.O.Blyth, G.C.Morrison, G.J.Pyle,	F0072	1	7
	S.Roman, N.M.Clarke, K.I.Pearce, P.J.Simmonds,	F0072	1	8
	R.J.Griffiths, D.L.Watson, M.D.Cohler, R.Wadsworth,	F0072	1	9
	J.O'Donnell, M.Smithson)	F0072	1	10
INSTITUTE	(2UK BIR, 2UK KCL, 2UK UK)	F0072	1	11
REFERENCE	(J,NP/A, 475, 422, 1987)	F0072	1	12
FACILITY	(VDT, 2UK ALD)	F0072	1	13
DETECTOR	(TELES, SIBAR, SILI) Ten detector telescopes were used	F0072	1	14
	which consisted of ~100-150 mu-m dE surface barrier			

Errors for C:\MyPrograms\Exfor\NewProjct\F0072.exf

Statistics
ERRORS: 1 **WARNINGS: 36**

Error Type	SUBENTRY	Error Message	Details
WARNING	F0072001	Unknown Keyword	AUTHR
EXCEPTION	F0072001	AUTHR is not a valid keyword	
WARNING	F0072001	[FACILITY]: Unknown facility	VDT
WARNING	F0072001	BIB : bad N2 (number of records within BIB section)	N2=39, found
WARNING	F0072001	ENDBIB : bad N1 (number of records within BIB section)	N1=39, found

1	12	23	34	45	56
---	----	----	----	----	----

Column: 1 Row: 333 Total: 1026 Insert C:\MyPrograms\Exfor\NewProjct\F0072.exf SUBENTRY F0072003 DATA section

F0072.exf

65.36	0.312				F0072	3	53
70.94	0.585				F0072	3	54
76.53	1.247				F0072	3	55
79.72	1.866				F0072	3	56
81.3	1.913	0.269			F0072	3	57
86.85	2.585				F0072	3	58
91.19	2.517				F0072	3	59
93.15	2.273				F0072	3	60
96.71	2.449				F0072	3	61
98.27	2.				F0072	3	62
1.01E+02	2.267				F0072	3	63

Errors for C:\MyPrograms\Exfor\NewProjct\F0072.exf

```

CHEX (Version 2000-2) run on 01-Apr-2010
-----
ENTRY F0072
** Label invalid or missing
   ENTRY      F0072      20050526      F0072  0   1
** Illegal BIB Keyword
   AUTHR      (J.B.A.England, L. Zybert, G.T.A.Squier, O.Karban, R. Zybert, F0072  1   5
   ~~~~~
** Illegal floating point number
   1.01E+02  2.267      F0072  3   63
   ~~~~~
    
```


ENTRY IS READY



Thank you!