

LEXFOR “Corrections”, “Data type” and “Status” (A8)

(N. Otsuka, O. Schwerer, 2015-03-12, Memo CP-D/869)

Conclusion 30 of the NRDC 2014 mentions that

1. Compilation of data sets renormalized by other than the author is not recommended.
2. Data sets corrected by other than the author should be compiled in another entry when the corrected data are well documented in a peer-reviewed journal with the correction procedure.
3. Data sets derived by other than the author are not for compilation in general, but may be compiled in another entry exceptionally when there is a strong need from EXFOR users and the derived data are well documented in a peer-reviewed journal with the derivation procedure.

In order to fulfil the Action 8 of the same meeting “Submit an update of LEXFOR for data corrected or derived by other than author”, we propose revision of LEXFOR “Corrections”, “Data type” and “Status” as appended.

Note that

- The item 1 of the conclusion is slightly modified in the LEXFOR draft not to weaken the conclusion.
- The option to compile the ratio from the absolute value (R_{CALC}) by other than the author is cancelled because it has been never used. It may be treated as “data derived by other than the author”.

The following change in the dictionary is also proposed:

Dictionary 35 (Data types)

CRCTD	Data reassessed or renormalized by other than the author
DEROT	Data derived by other than the author

Dictionary 16 (Status codes)

CRCTD	Data reassessed or renormalized by other than the author
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LEXFOR “Corrections”

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Consideration, Depending on the Compiler's Judgment

~~In general, the data resulting from the corrections applied by the author are compiled. However, evaluators frequently re-assess old data using improved corrections because they may have better knowledge on the theory of the experiment than that which was available to the author at the time of the experiment. (This may concern items such as spectra shapes, detector efficiency curves, etc.) In such cases, the re-assessed data is useful information to the user of EXFOR data and should, therefore, be compiled. They would be labelled under STATUS with the code RNORM. The author's original values must be kept.~~

~~Compare: Status: Normalization.~~

~~(Moved to LEXFOR “data type” and revised.)~~

For corrections done by others than author see **Data Type**.

LEXFOR “Data Type”

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Data renormalized by other than the author (New!)

Data renormalized by other than the author should not be compiled because even more recent values of a standard cross section can come up later, even more than once, and it is neither practical nor useful to follow such developments by repeatedly updating entries. Such renormalizations can be left to suitable software and, if needed, be stored in a separate database.

In this context, “renormalization” means a straightforward operation, usually a multiplication by a constant factor (e.g. due to a more recent value of a standard cross section or a gamma ray intensity).

Note:

The EXFOR master file may contain older entries with renormalized data, which are labelled with the STATUS code RNORM. While no new entries should be using this code, existing entries of this type may be kept.

Data corrected or reassessed by other than the author (New!)

Data sets corrected or reassessed by other than the author, when considered important, may be compiled in another entry, when the corrected or reassessed data are well documented in a peer-reviewed journal with the correction procedure.

In this context, “correction” or “reassessment” does not mean a straightforward operation such as multiplication by a constant factor, but e.g. taking into account a detector efficiency curve, geometry of the experiment, spectra shapes etc.

If such data are compiled in EXFOR, the data type CRCTD must be given.

A new entry must be created for such data with the provider of the renormalized or reassessed data under AUTHOR and the peer-reviewed journal under REFERENCE.

Example

```
ENTRY          21883   20110227
SUBENT        21883001 20110227
BIB           15      48
AUTHOR        (B.Haesner)
REFERENCE     (R,KFK3395,1982)
...
(Description on the experimental procedure)
...
SUBENT        21883010 20110227
BIB           3       4
REACTION      (2-HE-3 (N,EL) 2-HE-3,,DA)
REL-REF       (N,,M.Drosg+,J,NSE,172,87,2012)
Corrected data given
STATUS        (TABLE) Appendix (p66) of KFK-3395
              (OUTDT,29883002) Data corrected by M.Drosg available
ENDBIB        4
NOCOMMON      0       0
DATA          4       183
EN            ANG-CM   DATA-CM   DATA-ERR
MEV           ADEG     MB/SR       MB/SR
  5.0         33.1     409.6      41.0
  5.0         58.7     264.0      15.8
...

```

```
ENTRY          29883   20140506
SUBENT        29883001 20140506

BIB           15      48
AUTHOR        (M.Drosg, R. Avalos Ortiz, P.W. Lisowski)
REFERENCE     (J,NSE,172,87,2012)
...

```

(Description on the correction procedure)

```
...
SUBENT        29883002 20140506
BIB           3       4
REACTION      (2-HE-3 (N,EL) 2-HE-3,,DA,,CRCTD)
ANALYSIS      Corrections with better knowledge on ...
REL-REF       (R,,B.Haesner,R,KFK3395,1982)
Original data given
STATUS        (TABLE) Table VIII of Nucl.Sci.Eng.172(2012)87
              (CRCTD,21883010) Original data given
ENDBIB        4
NOCOMMON      0       0
DATA          4       183
EN            ANG-CM   DATA-CM   DATA-ERR
MEV           ADEG     MB/SR       MB/SR
  5.0         33.1     399.   43.
  5.0         58.7     259.   18.
...

```

Data derived by other than the author (New!)

Data sets derived by other than the author (e.g., derivation of the ratio of the cross section to the standard from the absolute cross section) are not for compilation in general, but may be compiled in another entry exceptionally when there is a strong need from EXFOR users and the derived data are well documented in a peer-reviewed journal with the derivation procedure.

If such data are compiled in EXFOR, the data type DEROT must be given.

A new entry must be created for such data with the provider of the derived data under AUTHOR and the peer-reviewed journal under REFERENCE.

Example

```
ENTRY          14329  20130626
SUBENT         14329001 20130626
BIB            15      68
AUTHOR        (J.L.Kammerdiener)
REFERENCE     (R,UCRL-51232,1972)
```

...
(Description on the experimental procedure)

```
...
SUBENT         14329090 20130626
BIB            3        3
REACTION      (92-U-235 (N,X)0-NN-1,,DA/DE)
REL-REF       (N,19329002,T.Kawano,J,NDS,120,272,2014)
              EDX derived from DDX given
STATUS        (CURVE) Fig.87 of UCRL-51232 (1972)
```

```
...
DATA          3        67
E             DATA
MEV           MB/SR/MEV
  9.329E-02   7.850E+02
  1.399E-01   5.686E+02
```

```
...
ENTRY          19329  20140506
SUBENT         19329001 20140506
BIB            15      68
AUTHOR        (T.Kawano)
REFERENCE     (J,NDS,120,272,2014)
```

...
(Description on the derivation procedure)

```
...
SUBENT         19329002 20140506
BIB            3        4
REACTION      (92-U-235 (N,X)0-NN-1,,DE,,DEROT)
REL-REF       (R,14329090,J.L.Kammerdiener+,R,UCRL-51232,1972)
              Double differential cross section given
STATUS        (TABLE) Data received from T.Kawano
              (DEF,14329090)
```

```
...
E-MIN         E-MAX      DATA
MEV           MEV       MB/MEV
  6.5         8.0       127.01
  8.0         9.5       69.86
```

LEXFOR “Status”

...

Correction and reassessment **Normalization**

If the codes ~~OUTDT~~ and ~~RNORM~~ and ~~CRCTD~~ are absent, the data are compiled as resulting from the author's corrections and normalizations.

~~Only in exceptional cases should renormalizations or reassessments of the data as given by an evaluator be compiled. However, some "renormalizations" are not trivial multiplication by a factor; for instance, when a detector efficiency curve or the geometry of the experiment is involved. For such cases, see **Corrections**.~~

A data set that is **corrected** or reassessed ~~renormalized~~ by other than the author an ~~evaluator~~ is labelled with the status code ~~CRCTD~~**RNORM**. The older data set that is

superseded by the later ~~renormalization~~ correction or reassessment **must be kept but** labelled with the status code `OUTDT`. Both must give a cross reference to the other data set as follows:

Examples:

```
STATUS      (OUTDT,19231002)
STATUS      (RNORMCRCTD,10231003)
```

~~Renormalization, in general, should be done by the compiler *only* with the advice and/or consent of the author.~~

All such data sets must be also indicated by the data type code `CRCTD` in the REACTION SF9. See LEXFOR **Data type**.

~~If the data were measured relative to a standard (with given source), but the authors quote only the cross section but not the ratio to the standard, and an expert such as an evaluator provides the **ratio** of the cross section to the standard to the data centre, this ratio, as recalculated, **may** be added to the compilation in addition to the cross section data published by the original authors, with status code `RCALC` and appropriate explanation in free text.~~

Example:

```
_____STATUS_____ (RCALC) Ratio to monitor recalculated by A.
_____Trkov, 2006-03-09
```

Notes:

~~If the authors published themselves both the cross section and the ratio to the standard, it is anyway obligatory to compile both quantities (as multiple reactions).~~

~~If this option is used, information must be given in free text from which source the ratio was obtained plus any other information needed to trace the procedure used.~~