Nuclear Data Section
International Atomic Energy Agency
P.O.Box 100, A-1400 Vienna, Austria

Memo CP-D/661 (Rev.)

Date: 5 August 2010
To: Distribution
From: N. Otsuka

Subject: **Draft of updated LEXFOR (IAEA-NDS-208 Rev.2010/09)**

A draft of updated LEXFOR (IAEA-NDS-208 Rev.2010/09) is now available at the NRDC webpage:
http://www-nds.iaea.org/nrdc/nrdc_doc/iaea-nds-0208-201009-dra.pdf.

Participants of the **EXFOR Workshop** (30 August to 3 September, 2010) are asked to look through the draft, and inform me misprints, more serious mistakes as well as questions for discussion until the end of the Workshop. Comments from all other NRDC members are also highly appreciated. I will correct the manuscript based on these feedbacks.

Major changes are based on memos, conclusions and actions, and they are summarized in the table below. In order to simplify production of the table of contents, headings of some chapters are reformatted, and the all headings are collected and sorted by page numbering in the table of contents.

Some revisions were made without memos. For example, Chapter "Covariance" is rewritten because the definition in the current version is not understandable for me. Probably the matrix coded under the keyword `COVARIANCE` is not covariance matrix, but correlation matrix. "Error Correlation" is several used, but this term is also questionable for me. But I did not change them.

I do not think we need a lot of equations in LEXFOR. But some equations useful to understand the quantity are added (e.g., definition of spectrum averaged cross section). Some equations in the current version are corrected and/or improved.

The original transcription proposed in Memo CP-N/81 was for keyword `TITLE`, but I put the table of transcription in the chapter "Free Text" because I do not see the reason to limit this proposal to free text under `TITLE`.

Comparison of various notations of polarization quantities in chapter "Polarization" was taken from N. Hoshizaki, J. Phys. Soc. Jpn. **55**, Suppl. p.549 (1986). I intend compilers may understand that we can not determine quantity codes by the notation used in the article.

This is still a draft, and open for discussion until the end of September. On the basis of your comments, I will revised the current draft, and release the final version in September 2010.

Main Changes

Page	Chapter	Change	References
A.1	Absorption	Process code of photo-nuclear data below particle emission threshold	CP-D/629 NRDC2010/A50
A.8	Author	Translation of characters not allowed in the EXFOR format	CP-N/80 NRDC2009/A45
C.1	Centre-of-Mass System	Cross section and Rutherford ratio as invariant quantity	CP-D/577
		Invariance of centre-of-mass energy and incident energy per nucleon under exchange of target and projectile	CP-D/622 NRDC2010/A50
D.1	Data Type	Omission of data type code for experimental data.	CP-D/552 NRDC2009/C17
		New example of derived data	CP-D/582 NRDC2010/C23 NRDC2010/A50
D.12	Differential Data	Invariance of relative energy	CP-D/611 NRDC2010/C17 NRDC2010/A50
F.2	Fission	Deletion of ratio of binary to ternary fission	CP-D/600 NRDC2010/A50
F.5	Fission-Neutron Spectra	Coding of average kinetic energy and energy spectrum of fission neutron	CP-D/599 CP-D/635 NRDC2010/C20 NRDC2010/C26
		Fission neutron spectrum relative to Maxwellian distribution (moved from LEXFOR “Spectrum Average”)	CP-D/635 NRDC2010/C26 NRDC2010/A50
F.9		Explanation of fission fragment production cross section	CP-D/589
F11		Explanation of total chain yield derivation and definition of fractional yields	CP-D/585
F.12		Explanation of provisional mass	CP-D/569
F.13 F.14		Differential fission yield	CP-D/613 NRDC2010/A50
F.14	Fission yield	Use of SF4 and SF7 for fission yield	CP-D/599 NRDC2010/C20 NRDC20010/A50
F.22 F.23	Free Text (Title)	Transcription of special characters and hyphenation in free text	CP-N/81 NRDC2009/A45
F.24 F.25	Fusion	New chapter	CP-D/626 NRDC2010/C29 NRDC2010/A50
G.2	General Quantity	Full revision	CP-D/621

G.3	Modifiers		NRDC2010/C22 NRDC2010/A50
I..2 I..3	Incident Particles (renamed from Incident-Projectile Energy)	Explanation of inverse kinematics	CP-D/622 NRDC2010/A50
I.7	Independent Variables	Heading of independent variable for reaction combination	CP-D/606
L.1 L.2	Light-Nuclei Reaction (Z<6)	Coding of intermediate state unstable against particle-decay	CP-C/389 NRDC2010/C28 NRDC2010/A56 CP-D/643
N.4	Nuclear Quantities	Explanation of level density coding	CP-D/512rev NRDC2008C/19
P.1	Partial Reactions	Definition of partial reaction and `REACTION` example	CP-D/587
P.7	Polarization	Distinction between tensor analyzing power and initial state spin-correlation parameter	CP-D/520
P.15 P.16	Production and Emission Cross Sections	Use of new modifier `RAB`	CP-D/546 NRDC2009/C7 NRDC2009/A40
R.4	Reaction Mechanisms	Deletion of “fusion, fast fission, and deep inelastic scattering”. (Moved to a new chapter “Fusion”)	CP-D/626 NRDC2010/C29 NRDC2010/A50
R.6	Reference	Articles compiled under REFERNCE	CP-D/565 (Rev.) NRDC2009/C10
S.1	Sample	Omission of TMP (data at the room temperature, thermal scattering)	CP-D/574 (Rev.)
S.2	Scattering	Definition of elastic and inelastic scattering	CP-D/607 NRDC2010/C24 NRDC2010/A50
		Elastic scattering for CPND	CP-D/521 NRDC2008/A60
S.6	Secondary Particles	Presence of `EN-SEC`	CP-D/587
S. 8	Single-Level Resonance Parameters	Resonance parameters outside the EXFOR compilation scope	CP-D/632
S.13	Spectrum Average	Definition of Bremsstrahlung spectrum average cross section	CP-E/117 NRDC2007/C10
S.15		Use of *kT* without conversion to mean energy	NRDC2009/C13
S.18	Status	Difference between TABLE and APPRVD.	CP-D/573
S.19		Source of numerical data	NRDC2008/A34 NRDC2009/C4 4C-4/177

			NRDC2010/C27 NRDC2010/A47
T.8	Thick- and Thin-Target yield	Difference between yield and multiplicity	CP-D/619 NRDC2010/C21 NRDC2010/A50
T.13	Total	Total for CPND	CP-D/521 NRDC2008/A60
		Total for PhND	CP-D/629 NRDC2010/A50
T.14 T.15 T.16	Transmission and Reaction Yield	New chapter	CP-D/584

Note that 2008NRDC/C14 ("No reply from author") was also concluded in 2005NRDC/C11 and implemented in the current manual.

Distribution:

blokhin@ippe.ru
chiba@earth.sgu.ac.jp
claes.nordborg@oecd.org
emmeric.dupont@oecd.org
ganesan@barc.gov.in
gezg@ciae.ac.cn
hongwei@ciae.ac.cn
jhchang@kaeri.re.kr
j.roberts@iaea.org
kaltchenko@kinr.kiev.ua
katakura.junichi@jaea.go.jp
kato@nucl.sci.hokudai.ac.jp
kiralyb@atomki.hu
l.vrapcenjak@iaea.org
manuel.bossant@oecd.org
manokhin@ippe.ru
mmarina@ippe.ru
mwherman@bnl.gov
nicolas.soppera@oecd.org
nklimova@kinr.kiev.ua
n.otsuka@iaea.org
nrdc@jcprg.org
oblozinsky@bnl.gov
ogritzay@kinr.kiev.ua
otto.schwerer@aon.at
pronyaev@ippe.ru
r.forrest@iaea.org
samaev@obninsk.ru
s.babykina@polyn.kiae.su
scyang@kaeri.re.kr
s.dunaeva@iaea.org
s.simakov@iaea.org
stakacs@atomki.hu
stanislav.hlavac@savba.sk
taova@expd.vniief.ru
tarkanyi@atomki.hu
varlamov@depni.sinp.msu.ru
vlasov@kinr.kiev.ua
vmclane@optonline.net
v.zerkin@iaea.org
yolee@kaeri.re
zhuangyx@ciae.ac.cn

cc:

cgc@ciae.ac.cn
draj@barc.gov.in
naikh@barc.gov.in
makinaga@nucl.sci.hokudai.ac.jp
tsubaki@nucl.sci.hokudai.ac.jp
tmatsumoto@nucl.sci.hokudai.ac.jp
pikulina@expd.vniief.ru
valentina.semkova@hotmail.com