Conclusions and Actions of the NRDC 2015 Meeting

Conclusions

General

C1 The next full NRDC meeting will be held in Beijing, China from 26 to 29 April 2016.

C2 The next technical NRDC meeting will be held in Vienna, Austria in the 2nd quarter of 2017.

C3 Two distribution lists are maintained at NDS (c.f. WP2015-07). Centres are recommended to use the "memo distribution list" for memo distribution while the "technical distribution list" for notification of new tapes, database update etc.

EXFOR General

C4 Collaborative effort by Boris Pritychenko and Klaus Guber on extraction of time-of-flight spectra measured at ORELA for EXFOR compilation is notable. The participants urge similar collaboration between centres and facilities (*e.g.*, GELINA, n_TOF).

C5 Centres are encouraged to identify experimental works still missing in EXFOR (*e.g.*, by scanning of citation lists of review articles).

Manuals and Dictionaries

C6 Revision of LEXFOR "Thick- and thin-target yields" (WP2015-08) was approved.

C7 Revision of LEXFOR "Data type" (WP2015-09) was approved.

C8 The new procedure to treat the sample thickness as an independent variable (WP2015-10) was approved.

C9 Revision to LEXFOR "Institute" (WP2015-11) was approved.

C10 Revisions to LEXFOR "Corrections", "Data type" and "Status" (WP2015-12) were approved. N.B. "or renormalized" must be deleted from the expansion of the proposed code `CRCTD`.

C11 Revision to LEXFOR "Author" (WP2015-13) was approved.

CINDA

C12 The CINDA Master File is updated from the EXFOR and NSR database in an automatic way by NDS, and regularly transmitted to other centres.

EXFOR Compilation Needs

C13 Compilation of integral data is desirable for simple or clean benchmarks, namely integral experiments performed under well-characterized neutron fields (*e.g.*, ^{252}Cf(s.f.) prompt fission neutron field), that allow validation of nuclear reaction quantities such as cross sections, neutron spectra. However it is not necessary for complex benchmarks (*e.g.*, benchmarks characterizing devices rather than nuclear data) because they are compiled in existing integral benchmark databases (*e.g.*, ICSBEP, SINBAD).

EXFOR Coding Rule

C14 Proposed changes on unit codes for differential probabilities (WP2015-27) were approved.

C15 The isomeric flag is optional for the ground state (`-G`) under the keyword `DECAY-DATA`.

Tools for Compilation and Dissemination

C16 The largest bases must be chosen for both x- and y-axis to minimize fractional error when digitization is performed.

C17 Centres are encouraged to provide suggestions to improve accessibility of a specific type of data on EXFOR retrieval systems.

C18 Centres should consider EXFOR knowledge distribution strategy.

Actions

EXFOR General

A1	All	(Standing action) Give the highest priority to compilation of new articles.
A2	All	(Continuing action) Correct erroneous entries listed on the EXFOR Feedback List according to the indicated priorities. All urgent corrections must be done by the next meeting.
A3	Otsuka	Consider a method to summarize retransmission efforts exceeding an important alteration recorded by the history code `A`.
A4	Zerkin	Coordinate a working group to discuss the opportunity to use XML as a new exchange format.

Manuals and Dictionaries

A5	Otsuka	(Continuing action) Revise the EXFOR Formats Manual for (a) short nuclide codes in REACTION SF7 (WP2011-28); (b) the keyword ERR-ANALYS (Conclusion 15 of NRDC 2012); (c) the keyword SAMPLE (Conclusion 17 of NRDC 2012); (d) reaction products (WP2013-24); (e) covariance (WP2014-13).
A6	Otsuka	(Continuing action) Delete the following footnote in the LEXFOR entry "History": Compilers are urged to document all changes under HISTORY.
A7	Otsuka	(Continuing action) Revise LEXFOR for (a) TOF covariance (WP2011-27); (b) new branch code ISP (WP2011-29); (c) specific temperatures for prompt fission neutron spectrum averaged quantities (WP2011-30); (d) compilation of prompt fission neutron quantities (WP2011-31); (e) nuclear resonance fluorescence (WP2012-11); (f) additional reference compiled in another entry (WP2012-12); (g) probability for *N* particle emission (WP2013-20); (h) heading of energy range for unresolved resonance parameters (WP2013-21); (i) resonance parameters for light-nuclei reaction (WP2013-24); (j) partial reaction, reaction product, isomeric state (WP2013-25=CP-D/781rev + CP-C/417 item 3); (k) independent and cumulative data (WP2013-26); (l) irradiation time (WP2013-27); (m) thick target production yield (WP2013-28); (n) digitization (WP2014-12); Covariance (WP2014-13); (o) delayed fission neutron spectrum (WP2014-23); (p) sample (WP2014-34); (q) neutron yields (WP2014-36); (r) fission yields (WP2014-37 and 44); (s) thermonuclear reaction rate (WP2014-38); (t) production and emission cross sections (WP2014-39); (u) delayed fission neutrons (WP2014-41); (v) history (WP2014-42); (w) partial reactions (WP2014-43); (x) thick-and thin-target yields (WP2015-08); (y) data type (WP2015-09); (z) institute (WP2015-11); (aa) corrections, data type and status (WP2015-12); (bb) author (WP2015-13).
A8	Otsuka	(Continuing action) Update Dictionaries every four months.
A9	Otsuka	Update dictionary 24, 213 and 236 according to WP2015-10 to treat the sample thickness coded under THICKNESS as an independent variable.
A10	Otsuka	List data sets which require addition of the sample thickness.
A11	Otsuka	Update dictionary 25, 26 and 236 for the differential probabilities (c.f. 4C-4/210).
A12	Zerkin	Summarize the role of family flags (also known as family codes, c.f. EXFOR Formats Manual Chapter 6) in systems.

CINDA

A13	Zerkin	(Continuing action) Export EXFOR and NSR to CINDA, and distribute it to other Centres every 6 months.

EXFOR Compilation Needs
(Underlined items are registered in the Article Allocation List.)

A14	Aikawa Chen Pritychenko	(Continuing action) Compile with priority the neutron source spectra listed in CP-D/700 (Rev.3).
A15	Aikawa Cabellos Pritychenko Takács Taova	(Continuing action) Compile with priority the proton-induced isotope production cross sections listed in CP-D/725 Rev. (~WP2012-19). Notify Semkova if the assigned centre does not compile the high energy (E > 1 GeV) data in the list.
A16	Aikawa Cabellos Otsuka Pritychenko Taova	(Continuing action) Compile with priority the light charged-particle induced isotope production cross sections listed in CP-D/757. Notify Semkova if the assigned centre does not compile the high energy (E > 1 GeV) data in the list.
A17	Chen Cabellos Pritychenko Varlamov Yang	(Continuing action) Compile with priority the articles cited in the NACRE II (an update and extension of European Compilation of Reaction Rates for Astrophysics) listed in Tables 1 and 2 of CP-D/833.
A18	Chen Cabellos Gritzay Pritychenko Taova	(Continuing action) Compile with priority the articles related to ion beam analysis application listed in CP-D/832 Rev.
A19	Cabellos Pritychenko	(Continuing action) Compile with priority the β-delayed neutron spectra published in the articles listed in the table of CP-D/837.
A20	Pritychenko	(Continuing action) Compile with priority articles related to the neutron dosimetry cross sections listed in the second table of CP-D/838.
A21	Cabellos Pritychenko	(Continuing action) Assess the articles reporting keV neutron capture cross section entries listed in CP-D/740, and add these articles with necessary revisions with priority.

A22	Mikhailiukova Otsuka Pritychenko	(Continuing action) Compile the articles listed in the last page of WP2014-33 (articles compiled in CINDA but missing in EXFOR). N.B. The CINDA record for EXFOR 13906 is corresponding to the EXFOR entry 14016, and additional compilation is not necessary.
A23	Cabellos Mikhailiukova Pritychenko Semkova	(Continuing action) Compile the thermal neutron-induced reaction data cited in Mughabghab's "Atlas of Neutron Resonances" and listed in 4C-3/395.
A24	Pritychenko	(Continuing action) Assess neutron cross section data useful for standard evaluation listed in CP-D/699, and compile them if appropriate. N.B. Renner's thesis on ^{6}Li(n,α) is for addition to 10841.
A25	Cabellos Mikhailiukova Pritychenko	(Continuing action) Perform EXFOR completeness checking for the list of articles received from NDS (articles cited in S. Mughabghab's "Atlas of Neutron Resonances") to identify articles missing in EXFOR, and assign responsibility of compilation of the identified articles to centres for by a memo.
A26	Otsuka	(Continuing action) Perform EXFOR completeness checking for the articles published in the conference proceedings in the past Symposia on Reactor Dosimetry (c.f. CP-D/838).
A27	Kenzebayev	(Continuing action) Scan domestic publications (*e.g.*, journals, laboratory reports) to identify articles for EXFOR compilation.
A28	Gritzay	(Continuing action) Consider compilation of neutron spectra for filtered neutrons published in the last 10 years.
A29	Cabellos Simakov	(Continuing action) Monitor CIELO mailing lists, and try to receive tabulated experimental data from evaluators who have their own internal database.
A30	Chen Pritychenko	Compile with priority prompt fission neutron multiplicity distributions listed in CP-D/867.
A31	Chen Cabellos Mikhailiukova Pritychenko	Compile with priority prompt fission neutron multiplicities listed in CP-D/871.
A32	Pritychenko	Compile time-of-flight spectra on DVDs newly received from ORELA in 2015.

A33	Aikawa Cabellos Taova Varlamov	Compile articles published in JINR Rapid Communication (KSO) and Phys. Part. Nucl. Lett. (PPN/L) and listed in CP-D/858.
A34	Taova	Compile data sets in Tables 1, 15, 16 and 19 of the Leningrad Institute of Nuclear Physics Report LIJAF-531 (c.f. CP-D/860).
A35	Simakov	Monitor availability of (1) revised ^{235}U(n,f) prompt fission neutron spectra measured at LANL (EXFOR 13982) and (2) ^{238}U(n,2n)^{237}U cross sections measured at TUNL described in WP2015-16.

EXFOR Quality Control
(Underlined items are registered in the EXFOR Feedback List.)

A36	Cabellos Pritychenko Taova	(Continuing action) Resolve inter-centre duplication C0846/F0160, C0968/A0320, C0998/O0452 and T0297/O0338 (c.f. CP-D/762), and inform Otsuka the conclusion.
A37	Otsuka	(Continuing action) Summarize the duplication pairs in the EXFOR entries listed in the item 3b of WP2013-17 (D-T neutron activation cross sections from OKTAVIAN, Osaka Univ.).
A38	Mikhailiukova	(Continuing action) Add English translation information of Atomnaya Energiya under the keyword REFERENCE as listed in WP2011-26.
A39	Mikhailiukova	(Continuing action) Add English translation information of Yadernaya Fizika under the keyword REFERENCE as listed in WP2012-24.
A40	Mikhailiukova	(Continuing action) Add English translation information of Yadernye Konstanty under the keyword REFERENCE as listed in Tables 1 and 2 of CP-D/777.
A41	Mikhailiukova	(Continuing action) Add English translation information of Zhurnal Eksp. Teoret. Fiziki (incl. Pis'ma v Redaktsiyu) under the keyword REFERENCE as listed in CP-D/809.
A42	Mikhailiukova	(Continuing action) Add English translation information of Doklady Akademii Nauk under the keyword REFERENCE as listed in CP-D/842.
A43	Mikhailiukova Pritychenko Taova	(Continuing action) Add English translation information of Izvestiya Rossiiskoi Akademii Nauk, Seriya Fizicheskaya under the keyword REFERENCE as listed in CP-D/847.

A44	Taova Varlamov	(Continuing action) Identify the bibliographies of the original Russian article published in Doklady for EXFOR 41257 and 41258, and notify them to Mikhailiukova and Otsuka.
A45	Pritychenko	(Continuing action) Look for the original data for the four data sets flagged by 1 in the table of CP-D/841(Rev.). If the original data are no longer available, consider using free text instead of RNORM.
A46	Cabellos Mikhailiukova Otsuka Taova	(Continuing action) Assess the entries listed in Appendix C of WP2014-32. Re-compile the article based on the entry in the "EXFOR updates and archive" maintained by NDS when appropriate. If not, create only a common subentry with minimum keywords (*i.e.*, TITLE, AUTHOR, REFERENCE, FACILITY, HISTORY) as time permits.
A47	Cabellos Mikhailiukova	(Continuing action) Try to add numerical data which are not superseded (SPSDD) but still unobtainable (UNOBT) for neutron-induced reaction data published in old literature for ^{1}H, ^{16}O, ^{56}Fe, ^{235}U, ^{238}U and ^{239}Pu.
A48	Taova	(Continuing action) Correct F0004.002 and 003 which are partial for secondary energies (c.f. CP-D/841).
A49	Cabellos	(Continuing action) Assess if REACTION of 22077.014, 029 and 044 can be improved as proposed in the table of CP-D/813 (Rev.2).
A50	Aikawa	Consider to use 6-C-12(PIP,KP)6-C-12,PAR,IPA,,MSC for the $^{12}_{\Lambda}$C hyper-nucleus production cross sections compiled in J1601.003.
A51	Cabellos Soppera	(Continuing action) Provide a list of erroneous and suspicious outliers by using various statistical approaches (c.f. WP2011-17, WP2013-19).
A52	Cabellos	(Continuing action) Provide JANIS–TRANS Checker Log list on every preliminary TRANS-file.
A53	Soppera	(Continuing action) Provide JANIS Import Log created from the EXFOR Master File to Otsuka on a regular basis.
A54	Otsuka	(Continuing action) Assess the JANIS Import Log provided by Soppera as above, and register important errors to the EXFOR Feedback System.
A55	Taova Valramov	(Continuing action) Search TRANS tapes missing in the NDS open area, and provide them to NDS.
A56	Cabellos	Delete 22711.003 which is duplication of 13918.002 (c.f. CP-D/762).

A57	Taova	Delete A0669.002-004 and 006-007 and also delete (or supersede) A0669.005 and 008 without deletion of A0820.002-050 (c.f. CP-D/797).
A58	Cabellos	Supersede five data sets in O0281 by those in O0277 as summarized in CP-D/805.
A59	Aikawa	Resolve duplication between E2049, E2125 and E2430 (WP2015-18).
A60	Cabellos Mikhailiukova Otsuka	Revise the unit codes of energy differential probability distributions listed in WP2015-27.
A61	Cabellos Pritychenko Semkova	Revise data β-delayed neutron emission probabilities listed in WP2015-25.
A62	Cabellos Taova	Revise data sets tabulated in the Leningrad Institute of Nuclear Physics Report LIJAF-531 and listed in CP-D/860.
A63	Cabellos Otsuka Pritychenko	Explain availability of the neutron spectra of ISNF, Sig-Sig, CFRMF and YAYOI facility compiled in the IRDF-2002 library under the keyword COMMENT of entries summarized in WP2015-17 as compiler's comments.
A64	Otsuka	Assess the difference of RIKEN neutron spectra compiled in EXFOR E2298 and SINBAD NEA-1552/14 summarized in WP2015-17.

EXFOR Coding Rule

A65	Lee	(Continuing action) Assess the articles received from Otsuka and check if the new definition of the η value proposed in WP2014-36 requires modifications.
A66	Mikhailiukova Otsuka	Formulate the coding rule for the volume number field of Pribory i Tekhnika Eksperimenta (PTE) (c.f. WP2015-26).

Tools for Compilation and Dissemination

A67	Otsuka	(Continuing action) Provide EXFOR News for every EXFOR Master File.
A68	Soppera	(Continuing action) Continue development and testing of the JANIS –TRANS Checker in cooperation with NDS and the other centres.

A69	Zerkin	(Continuing action) Update ZCHEX based on comments from compilers (*e.g.*, WP2011-36).
A70	All	(Continuing action) Provide feedback to NDS on the existing ZCHEX version (on bugs as well as desired additions.). Bugs must be reported with sample entries which are checked and not checked properly by ZCHEX.
A71	Zerkin	(Continuing Action) Prepare coding of covariance data for all EXFOR Entries having authors' covariances, and offer them to Data Centres according to Areas for finalizing and submitting to the database.
A72	All	Finalize and submit EXFOR entries including covariance data provided by Zerkin.
A73	Zerkin	(Continuing action) Continue development of the EXFOR upload web tool.
A74	Zerkin	(Continuing action) Every four months produce an EXFOR distribution with (a) full Dictionary distribution; (b) EXFOR in C4 and XC4 format; (c) Dictionaries in MS Access; (d) X4Map.
A75	Zerkin	(Continuing action) Continue development of X4+ (interpreted / extended EXFOR format), and distribute the program package including a standalone platform independent program to generate X4+ from a standalone EXFOR entry.
A76	All	(Continuing action) Consider to use the X4+ format for author approval, and also send feedback to Zerkin.
A77	Zerkin	(Continuing action) Continue development of a new database encompassing correction factors and relevant comments for suspect/erroneous data (X4-evaluated) presented in WP2010-19; keep NRDC informed about conclusions of discussions on new database.
A78	Zerkin Pritychenko	(Continuing action) Continue translation from EXFOR to NSR.
A79	All	(Continuing action) Provide Zerkin a list of name aliases to improve the search of EXFOR entries by the author name (WP2014-53).
A80	Zerkin Simakov	Continue development of the function to calculate cross sections for inverted reactions based on the detailed-balance principle.
A81	Zerkin	Introduce flags to indicate articles published in conference proceedings and the data are not available from the authors on the EXFOR Compilation Control System web page

A82	Zerkin	Develop a web page to provide numbers of new entries and retransmitted entries for each year and centre.
A83	JCPRG	(Continuing Action) Continue development and testing of GSYS in cooperation with NDS and other centres, taking into account compilers' remarks.
A84	All	(Continuing Action) Provide JCPRG feedback on GSYS.
A85	Otsuka	(Continuing Action) Support update of the Japanese editor (HENDEL) as time permits.
A86	CNPD	(Continuing Action) Continue development and testing of the EXFOR-Editor and InpGraph in cooperation with NDS and other data Centres, taking into account compilers' remarks.
A87	All	(Continuing Action) Provide CNPD feedback on EXFOR-Editor and InpGraph.