Conclusions and Actions of the NRDC 2018 Meeting

Conclusions

General

C1   The next full NRDC meeting will be held in Vienna, Austria in the 2nd quarter of 2020 (N.B. 1 July 2020 is the 50th Anniversary of the first EXFOR exchange).

C2   The next technical NRDC meeting will be held in Vienna, Austria from 9 to 12 April 2019.

C3   The next EXFOR compilation workshop will be held in Vienna, Austria from 22 to 25 October 2018.

EXFOR General

C4   Revision of the NRDC Protocol "Journal scanning responsibility" and Appendix B (WP2018-04=CP-D/955) was approved. N.B.

  (1) Both NTC and CNST will be scanned by CNDC.
  (2) PRM will be scanned by NDPC.
  (3) YFE will be scanned by UkrNDC.

C5   (1) Centres will be encouraged to publish their EXFOR related activities in journals. NDS will assist it if necessary.
  (2) Digitization could be a good subject in the NRDC progress report presented in the ND2019 conference.
  (3) NDS will continue update of an initial draft of the "EXFOR big article" (WP2017-07) as per inputs from centres.
  (4) The ND2013 article (Nucl. Data Sheets 120(2014)272) will be used for citation by EXFOR users.

C6   (1) Data published in conference proceedings should be compiled if the numerical data are available from the author.
  (2) Centres should inform the responsible centre and NDS when there is a request of a data set published in conference proceedings but missing in EXFOR. This may accelerate release of the numerical data.
  (3) The current moratorium duration (5 years) could be too long.

Manuals and Dictionary

C7   Revision of LEXFOR "Multilevel Resonance Parameters" (CP-D/953 Rev.=WP2018-08) was approved.

C8   Revision of EXFOR Formats Manual "Reference" (CP-D/953 Rev.=WP2018-08) was approved.

C9   Revision of EXFOR Formats Manual "BIB section" (CP-D/942=WP2018-09) was approved.

C10   The expansion of the status code SPSDD will be "Data superseded or withdrawn" (CP-D/946=WP2018-10).

C11   Revision of LEXFOR "Thermonuclear reaction rate" (CP-D/956=WP2018-11) was approved.

C12   Revision of EXFOR Formats Manual "Reaction specification" (CP-N/143=WP2018-12) was approved.

C13   Revision of LEXFOR "Measurement Techniques" (usage of FACILITY, INC-SOURCE and INC-SPECT) proposed in Memo CP-D/958=WP2018-29 was approved.

C14   The facility codes FRS and PRJFS will be made obsolete.

EXFOR Compilation Needs

C15   At least 3% of proton-induced reaction experimental works and 20% of alpha-induced reaction experimental works are missing in EXFOR (CP-D/937=WP2018-18, CP-D/947=WP2018-19).

EXFOR Quality Control

C16   Compilers were reminded that use of the obsolete data type code EXP (experimental data) is not detected by existing checking codes.

EXFOR Coding Rule

C17   If the page number is omitted under the REFERENCE, the absence must be indicated by including the separating comma for the reference type A, B, C, J and K. (See also CP-N/144=WP2018-13.)

C18   Cross sections per equivalent quantum have been coded with the modifier (REACTION SF8) BRA (CP-D/948=WP2018-27).

C19   The modifier (REACTION SF8) FCT will be used for quantities for a natural sample divided by the sum of the isotopic abundances of the target isotopes contributing to the reaction (CP-D/954=WP2018-28). When the authors give the isotopic abundances of the contributing target isotopes, they must be coded under the keyword SAMPLE.

C20   The process code (REACTION SF3) X will be used when the data set is partial for secondary energies originated from several reaction products and the secondary energies are unresolved (CP-D/954=WP2018-28).

C21 (1) Use of a fragment separator for separation of reaction products will be indicated under DETECTOR.
(2) Use of a secondary beam originated from projectile fragmentation will be mentioned under INC-SOURCE with a new incident source code FRAGM (CP-D/958=WP2018-29).

C22 A data subentry without a REACTION code could be useful to archive supplemental numerical data required for interpretation of the quantity compiled (e.g., neutron source spectra, time-of-flight resolution functions) in the BIB section.

Tools for Compilation and Dissemination

C23 The EXFOR Leaflet edited by CNPD (WP2018-31) is ready for printing. An EXFOR poster is also available.

Actions

EXFOR General

A1   All   (Standing action) Give the highest priority to compilation of new articles.

A2   All   (Standing 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   Send transmission statistics and correction statistics to centres every three months.

Manuals and Dictionaries

A4   Otsuka   (Continuing action) Update Dictionaries every four months.

A5   Otsuka   (Continuing action) Revise the EXFOR Formats Manual for

(1) "DECAY-DATA" and "RAD-DET" (CP-D/874=WP2016-28),
(2) "Reaction specification" (CP-D/880 Rev.=WP2016-29, CP-D/896=WP2016-33, CP-N/143=WP2018-12),
(3) "LEVEL-PROP" (CP-D/882=WP2016-30),
(4) "ERR-ANALYS" (CP-D/894 Rev.=WP2016-32),
(5) "FACILITY" (CP-D/899=WP2016-34),
(6) "REFERENCE" (CP-C/452=WP2017-08, CP-D/920=WP2017-33, CP-D/953Rev=WP2018-08, NRDC2018 Conclusion 4),
(7) "STATUS" (CP-D/915=WP2017-09),
(8) "INC-SPECT" (CP-D/932=WP2017-31),
(9) BIB Section (CP-D/942=WP2018-09).

A6	Otsuka	(Continuing action) Revise LEXFOR for

        (1) "Thermal Neutron Scattering" (4C-3/403 =WP2016-08),
        (2) "Fission Yields" (CP-D/895=WP2016-09),
        (3) "Thick- and thin-target yields" (CP-D/893=WP2016-31),
        (4) "Isomeric flags" (CP-D/896=WP2016-33),
        (5) "Status" (CP-D/904=WP2016-35, CP-C/443=WP2016-36),
        (6) "Sample" (CP-D/928=WP2017-35),
        (7) "Multilevel Resonance Parameters" (CP-D/953Rev=WP2018-08),
        (8) "Reference" (CP-D/953Rev=WP2018-08),
        (9) "Thermonuclear reaction rate" (CP-D/956=WP2018-11).

A7	Otsuka	Revised NRDC Protocol "Journal scanning responsibility" and Appendix B according to Conclusion C4.
A8	Otsuka	Submit a revision of LEXFOR "Sums" following Conclusion C19 and C20 (CP-D/954=WP2018-28).
A9	Otsuka	Updated the expansion of the status code SPSDD in Dictionary 16 according to Conclusion C10 (CP-D/946=WP2018-10).
A10	Otsuka	Make FRS and PRJFS obsolete in Dictionary 18 (Facilities).Also add FRAGM in Dictionary 19 (Incident sources). See also CP-D/958=WP2018-29.
A11	Otsuka	Add coding format of VAT/Y, VAT/O, VAT/I and VAT/F summarized in 4C-4/218=WP2018-25 in Dictionary 5 (Journals).
A12	Zerkin	(Continuing action) Summarize the role of family flags (also known as family codes, c.f. EXFOR Formats Manual Chapter 6) in systems (c.f. WP2017-11).

CINDA

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

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

A14	Fleming	(Continuing action) Compile articles published in JINR Rapid Communication (KSO) and Phys. Part. Nucl. Lett. (PPN/L) and listed in CP-D/858.

A15	Fleming	(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.
A16	Pritychenko	(Continuing action) Compile with priority articles related to the neutron dosimetry cross sections listed in the second table of CP-D/838.
A17	Fleming Pritychenko	(Continuing action) Compile the thermal neutron-induced reaction data cited in Mughabghab's "Atlas of Neutron Resonances" and listed in 4C-3/395.
A18	Fleming Pritychenko	(Continuing action) Compile with priority prompt fission neutron multiplicities listed in CP-D/871.
A19	Fleming Pritychenko	(Continuing action) Compile articles presented in Reactor Dosimetry Symposia listed in 4C-3/400=WP2016-16.
A20	Fleming Pritychenko	(Continuing action) Compile thermal neutron scattering data listed in 4C-3/404= WP2016-19.
A21	Fleming Pritychenko	Compile Pn values adopted in Rudstam's review (4C-3/410=WP2018-20).
A22	Kimura Pritychenko	(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.
A23	Pritychenko Taova	(Continuing action) Compile with priority the articles related to ion beam analysis application listed in CP-D/832 Rev.
A24	Kimura 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.
A25	Kimura Pritychenko Wang	(Continuing action) Compile with priority the neutron source spectra listed in CP-D/700 (Rev.3).
A26	Gritzay	(Continuing action) Consider compilation of neutron spectra for filtered neutrons published in the last 10 years.
A27	Pritychenko	(Continuing action) Monitor availability of P.E. Koehler's time-of-flight spectra on DVDs received from ORELA in 2015 for EXFOR compilation.
A28	Pritychenko	(Continuing action) Compile $^{238}U(n,f)$ cross sections in Table 4.6 of Zchariah W. Miller's thesis (Univ. of Kentucky, 2015) once they are published.

A29	Fleming Otsuka	(Continuing action) Receive the experimental fission product yield data collected by Robert Mills. Identify the numerical data sets missing in EXFOR once they are received.
A30	Fleming Otsuka	(Continuing action) Monitor communications among evaluators (e.g., CIELO mailing lists), and try to receive tabulated experimental data from evaluators who have their own internal database.
A31	Fleming Pritychenko	(Continuing action) Perform EXFOR completeness checking for the list of articles (4C-3/401, 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 by a memo.
A32	Gritzay Otsuka	Submit a proposal for compilation of supplemental numerical data (e.g., neutron source spectra, time-of-flight response function) in an additional subentry without a REACTION code (See also Conclusion C22).
A33	Kenzebayev Zholdybayev	(Continuing action) Scan domestic publications (*e.g.*, journals, laboratory reports) to identify articles for EXFOR compilation.

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

A34	Pritychenko	(Continuing action) Look for the original value corresponding 12576.003 which provides a value renormalized by NNDC. If the original value is available, compile it and link it with 12576.003 by STATUS=OUTDT and RNORM. If the original value is no longer available, consider using free text instead of RNORM. (CP-D/841 Rev.=WP2014-45).
A35	Pritychenko	(Continuing action) Add three values in Table XII of P,WASH-1018,63,1959 to EXFOR 12185 which must be linked with 12185.004, 006 and 007 (values renormalized at NNDC) by STATUS=OUTDT and RNORM (CP-D/841 Rev.=WP2014-45).
A36	Pritychenko	(Continuing action) Explain availability of the neutron spectra of the ISNF facility compiled in the IRDF-2002 library under the keyword COMMENT of 13153.001 as compiler's comments.
A37	Pritychenko	(Continuing action) Supersedes the ^{235}U(n,f) prompt fission neutron spectra in EXFOR 13982.002 (P. Staples) by those corrected for the sample size effect as suggested by Robert Height.
A38	Varlamov	Correct reference code for VMU, and add its English translation (MUPB) under REFERENCE in M0293.001 as listed in CP-F/015=WP2018-26.
A39	Varlamov	Identify the reference of EXFOR M0126 (J,FCY,2,243,1975 does not exist.). See also CP-D/957=WP2018-24.

<u>A40</u>	Pritychenko Taova	Revise the subentries compiling thermonuclear reaction rates and listed in Memo CP-D/956=WP2018-11
<u>A41</u>	Kimura Pritychenko	(Continuing action) Correct half-lives and isomeric flags listed in Memo CP-D/888 =WP2016-25.
<u>A42</u>	Mikhailiukova Taova Varlamov	Add English translation information of Russian journals (KSF, FCY, ZET, ZTF) under REFERENCE as listed in Memo CP-D/957=WP2018-24.
<u>A43</u>	Flemming Mikhailiukova Taova Varlamov	Correct reference codes including the year of publication in the volume number field listed in Memo 4C-4/216. (N.B. CJD reported progress in correction in Memo 4C-4/218).
<u>A44</u>	Flemming Kimura Otsuka Taova Varlamov	Delete the "subentry 1" listed in WP2018-23 ("Duplication") if the proposal on the working paper is acceptable. If not, propose Otsuka an alternative solution.
A45	Fleming	(Continuing action) Consider addition of numerical data which are not superseded (SPSDD) and suitable for digitization, 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.
A46	Fleming	(Continuing action) Check the n-p scattering data set in EXFOR 22207.002 (G. Fink) against G. Fink's thesis (e.g., reference frame – lab or c.m.).
A47	Fleming	(Continuing action) Provide a report on mistakes in bibliographies and spells on each preliminary tape.
A48	Fleming	(Continuing action) Provide a list of erroneous and suspicious outliers by using various statistical approaches (c.f. WP2011-17, WP2013-19).
A49	Varlamov	Check if the volume number is absent for VMU published in 1969 and before.
A50	Otsuka Pritychenko	(Continuing action) Revise EXFOR entries compiling data sets from ORELA 40 m flight station listed in the Appendix of 4C-3/407=WP2017-30 by addition of 1) the corrigendum under REFERENCE of the common subentry, 2) STATUS=OUTDT to each data subentry with the correction factor in free text.
A51	Otsuka	(Continuing action) Submit a revised Memo CP-D/933 by addition of the remark to each subentry from Takács.

A52	Fleming Kimura Otsuka Taova	(Continuing action) Revise the REACTION codes of the thick target considering the changes proposed in Appendix of CP-D/933=WP2017-28 once the originating centre receives extraction of Revised Memo CP-D/933 from Otsuka. Revised entries must be assembled in a preliminary tape without including other entries to make trace of corrections at NDS easier.
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.

EXFOR Coding Rule

A55	Fleming	(Continuing action) Check whether the current description of the eta value in LEXFOR defines the quantities compiled in entries listed in CP-D/789 (Rev.) (*e.g.*, whether the denominator is absorption cross section or non-elastic scattering cross section) in cooperation with Lee and Otsuka.

Tools for Compilation and Dissemination

A56	All	Inform Otsuka the number of EXFOR Leaflet hard copies to be printed by CNDC by the end of June.
A57	Taova	Replace the JAEA logo is the official one, and send source files of the EXFOR Leaflet to Ge for printing.
A58	Ge	Print EXFOR Leaflet.
A59	Mikhailiukova	Monitor progress in preparation of an English translation of V.N.Manokhin et al., Russian Nuclear Data Centre: The story of development and activity, Yad. Konst. 2017 No.2 p.117 for publication as an INDC(CCP) report.
A60	Fleming	(Continuing action) Make available on the NEA Data Bank web site the EANDC and NEANDC reports compiled in EXFOR and not available as INDC reports.
A61	Pikulina	(Continuing action) Continue development and testing of the EXFOR-Editor and InpGraph in cooperation with NDS and other data Centres.
A62	All	(Continuing action) Provide Pikulina feedback on EXFOR-Editor and InpGraph.
A63	Kimura	(Continuing action) Continue development and testing of GSYS in cooperation with NDS and other centres.

A64	All	(Continuing action) Provide Kimura feedback on GSYS.
A65	Soppera	(Continuing action) Continue development and testing of the JANIS TRANS Checker in cooperation with NDS and the other centres.
A66	All	(Continuing action) Provide Soppera feedback on JANIS TRANS Checker.
A67	Bhattacharyya	Keep centres informed about the progress in development of the EXFOR-I editor.
A68	Nayak	Monitor progress in development of the EXFOR-I editor.
A69	Otsuka	(Continuing action) Provide EXFOR News every month.
A70	Otsuka	(Continuing action) Support update of the Japanese editor (HENDEL) as time permits.
A71	Zerkin	(Continuing action) Update ZCHEX based on comments from compilers (*e.g.*, WP2011-36).
A72	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.
A73	Zerkin	(Continuing action) Distribute the program package including a standalone platform independent program to generate X4+ from a standalone EXFOR entry.
A74	All	(Continuing action) Consider to use the X4+ format for author approval, and also send feedback to Zerkin.
A75	Zerkin	(Continuing action) Continue development of the EXFOR upload web tool.
A76	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.
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	(Continuing action) 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.

A79	Zerkin	(Continuing action) Consider translation of fission yields in EXFOR to a C4-like format in consultation with A. Trkov and B. Pritychenko.
A80	Zerkin Pritychenko	(Continuing action) Continue translation from EXFOR to NSR.
A81	Jing Kimura Pikulina Zerkin	(Continuing action) Study problems in 2D calibration of original pictures, and process of approval of results of digitizing using plotting facilities.
A82	All	(Continuing action) Finalize and submit EXFOR entries including covariance data provided by Zerkin (WP2017-Z3).
A83	All	(Continuing action) Provide Zerkin a list of name aliases to improve the search of EXFOR entries by the author name (WP2014-53).