**Nuclear Data Section**

**International Atomic Energy Agency**

**P.O.Box 100, A-1400 Vienna, Austria**

**Memo CP-D/1106**

**Date:** 16 April 2024

**To:** Distribution

**From:** N. Otsuka, V. Zerkin

**Subject: BIB/BIB link by pointer**

The current EXFOR Formats Manual restricts use of pointers to the following five cases:

1. Multiple reaction formalism
2. Vector common data (*abolished*)
3. BIB/DATA link
4. BIB/BIB link
5. Complemental results (also known as alternative results)

In the case 1, 3 and 5, several data sets are compiled together in a subentry, and each dataset is defined by its own REACTION code string. These cases can be implemented in a database system without a pointer by separating the subentry to independent datasets,

***Example***(two datasets defined by two REACTION codes in a subentry)**:**

**Subentry X1234.012**

REACTION 1(78-PT-0(A,X)80-HG-195-G,,SIG)

2(78-PT-0(A,X)80-HG-195-M,,SIG)

DECAY-DATA1(80-HG-195-G,10.5HR,DG,585.1,0.02)

2(80-HG-195-M,41.6HR,DG,261.8,0.31)

…

EN DATA 1DATA-ERR 1DATA 2DATA-ERR 2

MEV MB MB MB MB

28.4 9.8 0.2 19.9 0.1

19.5 0.20 0.04 0.32 0.05

…

can be reorganized to two datasets without pointers:

**Dataset X1234.012.1**

REACTION (78-PT-0(A,X)80-HG-195-G,,SIG)

DECAY-DATA (80-HG-195-G,10.5HR,DG,585.1,0.02)

…

EN DATA DATA-ERR

MEV MB MB

28.4 9.8 0.2

19.5 0.20 0.04

…

**Dataset X1234.012.2**

REACTION (78-PT-0(A,X)80-HG-195-M,,SIG)

DECAY-DATA (80-HG-195-M,41.6HR,DG,261.8,0.31)

…

EN DATA DATA-ERR

MEV MB MB

28.4 19.9 0.1

19.5 0.32 0.05

However, BIB/BIB links do not have any connection with DATA section, therefore they cannot be used together with multiple reaction formalism (BIB/DATA links).

***Example.*** *Titles, authors and references coded with the pointer A and B irrelevant to the cross section values coded under DATA with the pointer 1 and 2:*

TITLE AIsomeric ratios of 195Hg

BPt(a,x)195Hg isomeric ratios

AUTHOR A(N.Otuka, S.Takacs)

B(N.Otuka, M.Aikawa)

REFERENCE A(J,ABC,12,345,2026)

B(C,2025MADRID,,123,2025)

Preliminary data in tables

INSTITUTE (3ZZZIAE,3HUNDEB,2JPNHOK)

….

REACTION 1(78-PT-0(A,X)80-HG-195-G,,SIG)

2(78-PT-0(A,X)80-HG-195-M,,SIG)

DECAY-DATA1(80-HG-195-G,10.5HR,DG,585.1,0.02)

2(80-HG-195-M,41.6HR,DG,261.8,0.31)

…

EN DATA 1DATA-ERR 1DATA 2DATA-ERR 2

MEV MB MB MB MB

28.4 9.8 0.2 19.9 0.1

19.5 0.20 0.04 0.32 0.05

To solve these problems, we propose the followings:

1. Forbid BIB/BIB links
2. Introduce new free text identifiers *#title:* and *#author:* to the REFERENCE with which compilers may provide the title and authors of a secondary reference if they are important. The free text belonging to these identifiers should not be followed by additional free text.

Note. Similar extension was introduced for coding DOI using *#doi:* (see WP2009-25)

***Example***:

TITLE Isomeric ratios of 195Hg

AUTHOR (N.Otuka, S.Takacs)

REFERENCE (J,ABC,12,345,2026)

(C,2025MADRID,,123,2025)

Preliminary data in tables

#title: Pt(a,x)195Hg isomeric ratios

#author: N.Otuka, M.Aikawa

INSTITUTE (3ZZZIAE,3HUNDEB,2JPNHOK)

….

REACTION 1(78-PT-0(A,X)80-HG-195-G,,SIG)

2(78-PT-0(A,X)80-HG-195-M,,SIG)

DECAY-DATA1(80-HG-195-G,10.5HR,DG,585.1,0.02)

2(80-HG-195-M,41.6HR,DG,261.8,0.31)

…

EN DATA 1DATA-ERR 1DATA 2DATA-ERR 2

MEV MB MB MB MB

28.4 9.8 0.2 19.9 0.1

19.5 0.20 0.04 0.32 0.05

**Distribution:**

a.koning@iaea.org

abhihere@gmail.com

aloks279@gmail.com

daniela.foligno@oecd-nea.org

dbrown@bnl.gov

draj@barc.gov.in

exfor@oecd-nea.org

fukahori.tokio@jaea.go.jp

ganesan555@gmail.com

gezg@ciae.ac.cn

iwamoto.osamu@jaea.go.jp

jmwang@ciae.ac.cn

kaltchen@ukr.net

kimdh@kaeri.re.kr

kimura.atsushi04@jaea.go.jp

l.vrapcenjak@iaea.org

manuel.bossant@oecd-nea.org

masaaki@nucl.sci.hokudai.ac.jp

marina-03-08@yandex.ru

michael.fleming@oecd-nea.org

mmarina@ippe.ru

nicolas.soppera@oecd-nea.org

n.otsuka@iaea.org

nrdc@jcprg.org

odsurenn@gmail.com

ogritzay@ukr.net

ogrudzevich@ippe.ru

otto.schwerer@aon.at

pikulina@expd.vniief.ru

pritychenko@bnl.gov

s.okumura@iaea.org

scyang@kaeri.re.kr

selyankina@expd.vniief.ru

sonzogni@bnl.gov

stakacs@atomki.mta.hu

stanislav.hlavac@savba.sk

sv.dunaeva@gmail.com

tada@nucl.sci.hokudai.ac.jp

taova@expd.vniief.ru

tarkanyi@atomki.hu

v.devi@iaea.org

v.zerkin@iaea.org

vidyathakur@yahoo.co.in

vsemkova@inrne.bas.bg

vvvarlamov@gmail.com

yolee@kaeri.re.kr

zholdybayev@inp.kz