**Nuclear Data Section**

**International Atomic Energy Agency**

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

**Memo CP-D/985**

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**To:** Distribution

**From:** N. Otsuka

**Subject: Dictionaries 45, 113 and 213 (CINDA and Web quantities, Reaction types)**

During preparation of an instruction of EXFOR retrieval for end users, I realized that two Web quantities FY (fission product yields) and MFQ (fission neutron quantities) return too many results even if we specify the target (e.g., U-235), projectile (e.g., N) and the incident energy (e.g., thermal). To improve the situation, they are going to be divided to

* FY (fission product yields) to FY (fission product yields) and ZAP (most probable charge or mass), and
* MFQ (fission neutron quantities) to NU (fission neutron multiplicity) and MFQ (differential fission neutron multiplicity),

respectively. Additionally, CINDA quantities FY (fission product yield) and NUF (fragment neutrons) are going to be divided to

* CHG (fragment charge) and FY (fission product yield), and
* MFQ (differential fission neutron multiplicity) and NUF (fragment neutrons),

respectively, for better structuring.

These changes do not make any impact in EXFOR compilation, and we can change them again easily if needs arise.

**Hierarchy of reaction type – CINDA quantity – Web quantity**

**Old**

|  |  |  |
| --- | --- | --- |
| **Reaction type** | **CINDA Q**  | **Web Q.** |
| AP, APA, APP, APR, FY, FY2, FYA, FYE, FYP, FYR, FYS, FYZ | FY | FY |
| ZP, ZPP | CHG | FY |
| ETA, ETR | ETA | MFQ |
| GZ, GZP, NAE, NUD, PN, PNE, PNP | NUD | MFQ |
| NU, NUP, NUR | NU | MFQ |
| NUA, NUE, NUF | NUF | MFQ |

**New**

|  |  |  |
| --- | --- | --- |
| **Reaction type** | **CINDA Q**  | **Web Q** |
| FY, FY2, FYA, FYE, FYP, FYR, FYS, FYZ | FY | FY |
| AP, APA, APP, APR | *MAS* | *ZAP* |
| ZP, ZPP | CHG | *ZAP* |
| ETA, ETR | ETA | *NU* |
| GZ, GZP, NUD, PN, PNP | NUD | *NU* |
| NU, *NUN*, NUP, NUR | NU | *NU* |
| NAE, NUA, NUE, PNE | *MFQ* | MFQ |
| NUF | NUF | MFQ |

**Dictionary 45 (CINDA quantities)**

MAS Fragment mass

MFQ Differential fission neutron multiplicity

NUF (*Obsolete*. Used only by obsolete reaction types and manual CINDA records.)

**Dictionary 113 (Web quantities)**

MFQ (Expansion updated)

NU Fission neutron multiplicity

ZAP Most probable charge or mass

**Dictionary 213 (Reaction types)**

NUF (*Obsolete*. Used only by obsolete quantity codes.)

NUN Probability for emission of N neutrons

**Distribution:**

a.koning@iaea.org

abhihere@gmail.com

aloks279@gmail.com

dbrown@bnl.gov

draj@barc.gov.in

fukahori.tokio@jaea.go.jp

ganesan555@gmail.com

gezg@ciae.ac.cn

iwamoto.osamu@jaea.go.jp

j.c.sublet@iaea.org

jmwang@ciae.ac.cn

kaltchenko@kinr.kiev.ua

kenya.suyama@oecd-nea.org

kimura.atsushi04@jaea.go.jp

l.vrapcenjak@iaea.org

manuel.bossant@oecd-nea.org

masaaki@nucl.sci.hokudai.ac.jp

michael.fleming@oecd-nea.org

mmarina@ippe.ru

nicolas.soppera@oecd-nea.org

n.otsuka@iaea.org

nrdc@jcprg.org

odsurenn@gmail.com

ogritzay@kinr.kiev.ua

ogrudzevich@ippe.ru

otto.schwerer@aon.at

pikulina@expd.vniief.ru

pritychenko@bnl.gov

s.okumura@iaea.org

samaev@obninsk.ru

sbabykina@yandex.ru

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

vvvarlamov@gmail.com

v.zerkin@iaea.org

vidyathakur@yahoo.co.in

vsemkova@inrne.bas.bg

yolee@kaeri.re.kr

zholdybayev@inp.kz