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MEMO 4C-4/103

DATE : 06 April 2000
TO: Distribution
From: S. Maev (alias: S.Mayev)
Reference: MEMO 4C-4/100, 4C-4/101
Subject: New Quantity codes, Addition to Dictionary 36

Both in MEMO 4C-4/100 and 4C-4/101 new code

>>
>> ,PAR,WID/STR - Partial Strength of resonance (for example, for
>> gamma-transition on a given resonance energy level)
>>
>> Reference: JINR-E3-98-212, p.214,1999
>> ENTRY 41351
>>
was proposed.

Now, instead of code ",DA/TEM,FF,LEG/RS" new code is forwarded:

Diction 36 - Quantities.

,DA/TMP,FF,LEG/RS - Temperature-dependent fission-fragments' angular
distribution, Legendre coefficient of the form

$$4\pi/\text{Sig } d\text{-Sig}/d\text{-Omega}=1+\text{Sum}(A(L,T)P(L))$$

Reference J,YF,vol.60,issue 6, p.981,199706
ENTRY 41295

LEXFOR Entries for both codes were attached to MEMO 4C-4/101. Now they are attached again in Word97 with slight modification.

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LEXFOR (proposed in addition to MEMO CP-C/254, 4C-4/101)

Strength of the Resonance

The strength of the resonance is defined as

$$\omega\Gamma = \frac{2J+1}{(2j_i+1)(2j_t+1)} \frac{\Gamma_i\Gamma_r}{\Gamma}$$

Where

J = spin of resonance

j_i = spin of incident projectile

j_t = spin of target

Γ_i = partial width for formation of resonance by incident particle i ,

Γ_r = partial width for decay of resonance by reaction channel r ,

Γ = total width of resonance

Strengths of the Resonance are determined experimentally by measuring the area A under the resonant yield curve:

$$\omega\Gamma = \frac{2\varepsilon}{\lambda_R} \frac{A_t}{A_t + A_i} Y_r$$

where λ_R = particle wavelength at the resonance energy

Y_r = stopping power

Partial strength of the resonance applies when reaction channel "r" is the transition on specific energy level, for example by γ -decay.

EXFOR coding

REACTION (Z-S-A(N,EL),,WID/STR)

Or

REACTION (Z-S-A(N,G),PAR,WID/STR)

Units: energy, e.g. EV or MILLI-EV

LEXFOR (proposed)

SAMPLE

.....previous text.....

Example

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BIB
REACTION    ( Z-S-A(N,TOT) , , SIG/TMP )
or
REACTION    ( Z-S-A(N,F) , PRE , DA/TMP , FF , LEG/RS )
. . . . .
ENDBIB
COMMON      1
TEMP
K
    0.6
ENDCOMMON
DATA        3
EN          DATA      ERR-T
. . . . .
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