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Memo CP-C/254

DATE: August 26, 1999
TO: Distribution
FROM: V. McLane
SUBJECT: Resonance strength

Please make the following dictionary updates.

Add to Dictionary (Reports)

STR	Strength

Add to Dictionary 36 (Quantities)

,WID/STR	Resonance strength

A proposed LEXFOR entry is attached

Distribution

M. Chiba, Sapporo
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LEXFOR (proposed)

Resonance Strength

The resonance strength 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_p = spin of incident projectile,
- j_t = spin of target,
- $э_p$ = partial width for formation of resonance by incident particle p,
- $э_r$ = partial width for decay of resonance by reaction channel r,
- э = total width of resonance.

Resonance strengths are determined experimentally by measuring the area under the resonant yield curve:

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

where: 8_R = particle wavelength at the resonance energy,
γ = stopping power

EXFOR coding

REACTION string: ,WID/STR
Units: energy, *e.g.*, EV

The energy coded is the resonance energy as for other resonance data.