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 strenght 0f 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

```
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
.  .  .  .  .  .  .  .  .  .  .
```